Arizona Medicine

JOURNAL OF ARIZONA MEDICAL ASSOCIATION

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

Volume 18 Number 6

June, 1961

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(1) Carter, S.: M. Clin. North America 37:315, 1953.
(2) Maltby, G. L.: J. Maine M. A. 48:257, 1957.
(3) Crowley, J. W.: M. Clin. North America 42:317, 1958.

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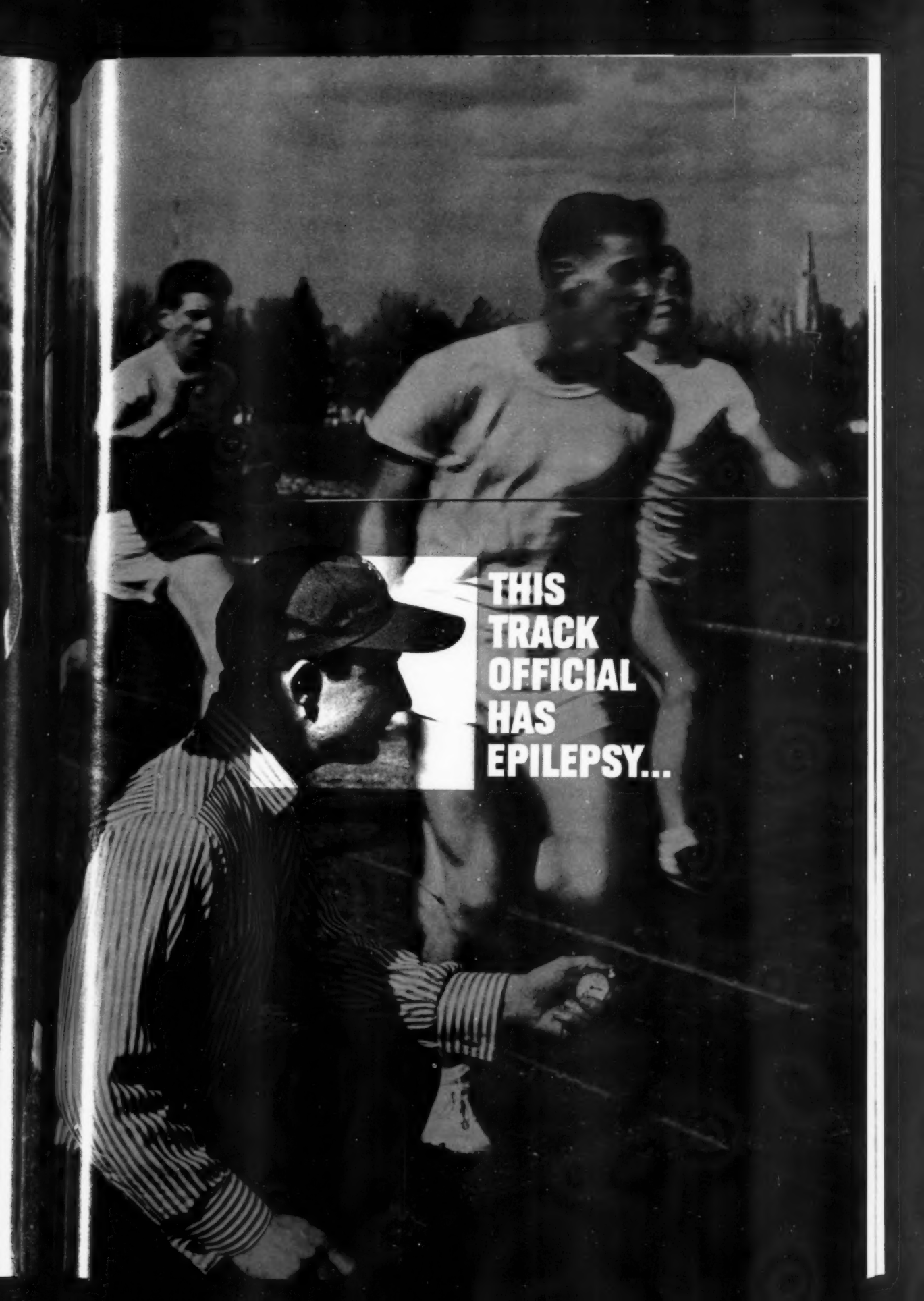
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Arizona Medical Association Reports

Arizona Medicine

June, 1961 Vol. 18, No. 6

Presentation of A. H. Robins Co. Community Service Award

Dr. Smith, Ladies and Gentlemen:

This year the A. H. Robins Company has instituted a Community Service Award, to honor that physician in each state judged by his colleagues to have contributed most significantly to civic activities. I believe that Mr. E. Claiborne Robins, the President of the company, whose conception this is, intends that the distinction serve to correct a false public impression of the physician as an aloof and self-centered professional, by calling attention to his widespread interest and involvement in public affairs. Tonight we are presenting not only the first Community Service Award in Arizona but also the first in the nation, and the recognition is therefore particularly notable.

The recipient of the Award was selected by a special committee of the Board of Directors from a list of nominees forwarded by the various county societies. He is Dr. Delbert L. Secrist of Tucson. It is my pleasant charge to recount for you the accomplishments in civic concerns which made him the unanimous choice of the committee. I shall not mention his professional achievements, which are many, for they were not the determinants. It is obvious, however, that only a physician respected for his professional attainments would be deemed eligible by his peers in the first place.

Dr. Secrist first burst into public acclaim as an All-American end at Washington and Jefferson College. The course of his future sturdy conservatism was predictable even in those days, for he had the prudence to be chosen *right* end.

His interest in athletics continued and he coached football and baseball at Wisconsin while going to medical school, and until recent years he officiated frequently on the University of Arizona gridiron. He has been a member of the Board of Directors of the Towncats, the University booster club, a member of the Board of Directors and President of the Tucson YMCA, and he is an active member of the Tucson Aquatic Officials Association, known nationwide for its efficiency in the management of swim meets and which he helped to found.

There are many other entries in the roster of Dr. Secrist's community interests. He is a member of the Board of Elders of his Church;

Presented at the President's Dinner-Dance, 70th Annual Meeting, Arizona Medical Association, Scottsdale, 28 April 1961.

Dr. Delbert L. Secrist (second from left) receives the first A. H. Robins Community Service Award from Dr. Lindsay E. Beaton, retiring President of The Arizona Medical Association. On the right is Dr. Leslie B. Smith, new President of The Arizona Medical Association, and on the left is Mr. Alfred M. Gibbs, District Supervisor, of A. H. Robins Company. Dr. Secrist is the first person to receive this new award by the nationally known pharmaceutical company.

the district advisor of his fraternity at the University; a 33rd degree Mason and Past Master of his lodge; a many time worker on United Campaign Drives; a staunch PTA supporter.

This would be enough, but his major civic contribution has yet to be cited – his leadership in public education. Since 1950 he has been a member of the Board of Trustees of Tucson School District No. 1, and since 1955 its chairman. In 1952 he received a certificate for eminent work in the prevention of juvenile delinquency from the National Association of U. S. Deputy Marshalls, one of six Americans so designated. In 1958 the Arizona Congress of Parents and Teachers granted him life membership for his devotion to youth. He has been a member of the Governor's Committee on Education. And just this year he received a special citation from the Arizona School Board Association for what was stated on the scroll to be an "outstanding contribution to the people of Arizona and the public schools of the state."

Tonight his colleagues in medicine add their acclamation to that of the citizens of Arizona. We see in him a large hearted man who has been able to extend the solicitude of the physician from the bedside, the consulting room, the operating table to the whole community. We find it very fitting that tonight's presentation should be first in Arizona, first in the nation.

It is with a tremendous sense of the justice of the award that, on behalf of the A. H. Robins Company, I present this plaque for distinguished community service to Delbert L. Secrist.

Deb, our congratulations, our admiration, our very great affection.

Lindsay E. Beaton, M.D.

"nutrition...present as a modifying or complicating factor in nearly every illness or disease state"[1]

1. Youmans, J. B.: Am. J. Med. 29:659 (Nov.) 1958

cardiac diseases "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."[3]
3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

degenerative diseases "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."[6] 6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."[9]
8. Duncan G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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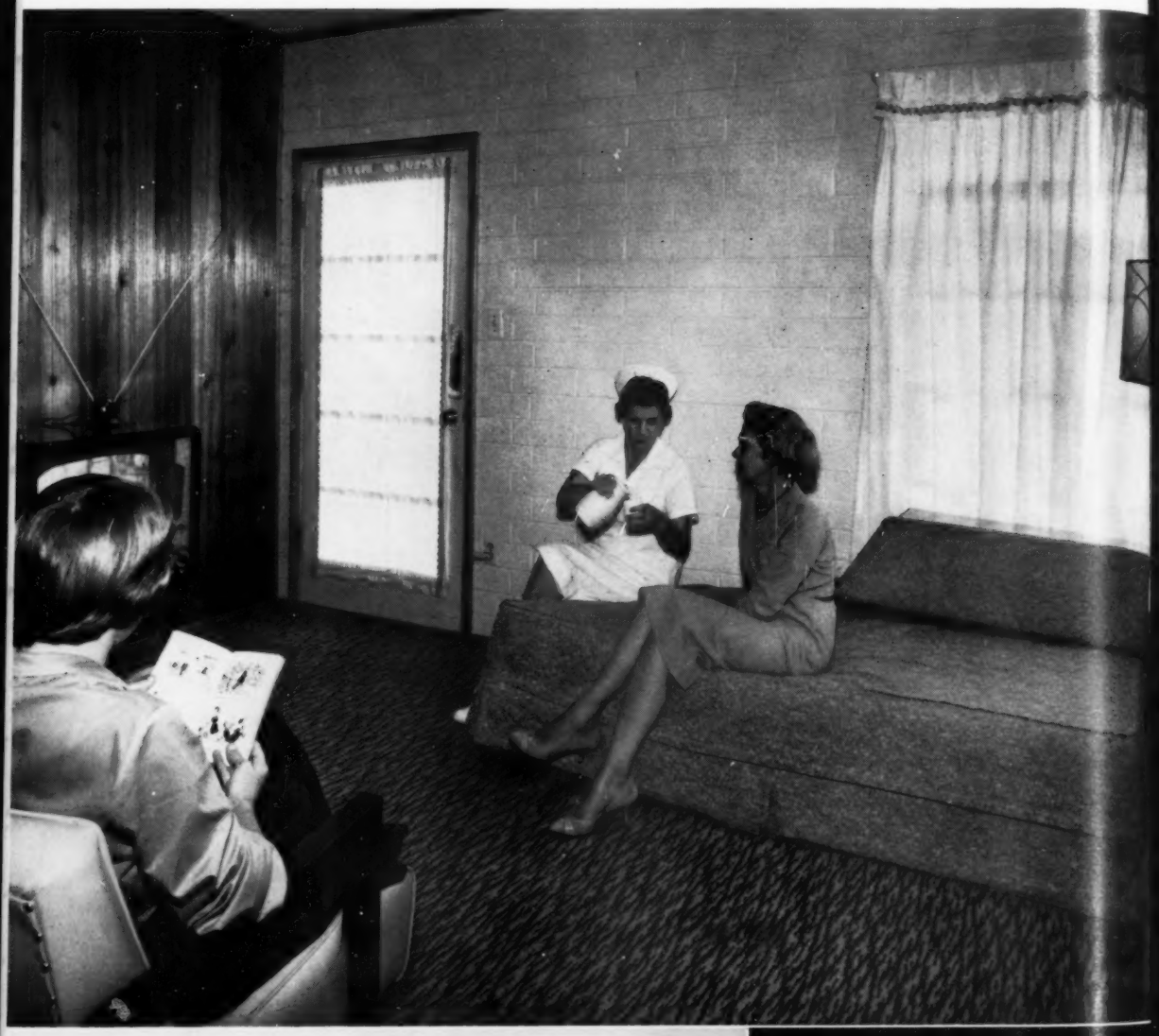

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Vol. 18, No. 6 June, 1961

An Unusual Precipitate Given By P-Toluene Sulfonic Acid In The Serum Of Patients With Systemic Lupus Erythematosus

Harry E. Thompson, M.D.
K. K. Jones, Ph.D.

The treatise by our member, Doctor Harry Thompson, and his associate, Doctor Jones, was selected as "The Award Paper of the Year" for 1961 because it is an original discovery, the value of which is supported by the evidence gained through the highest quality of scientific research.

Leslie B. Smith, M.D., President

A comprehensive report on the development of the Thompson-Jones test which is a valuable laboratory tool in the hands of the authors. Their results are presented clearly and this test will deserve careful evaluation by clinician and research investigators encountering systemic lupus erythematosus.

AN UNUSUAL and peculiar precipitate which occurred during a routine estimation of cholesterol by the method of Pearson, Stern and McGavack (1), led to the development of a test for systemic lupus erythematosus. This test, after four years of study, was reported before the Ninth International Congress on Rheumatic Diseases at Toronto, Canada, June 1957, and published in the J.A.M.A., March 1958(2). There has been a wide spread interest in this test, which has raised many questions and some criticism. This has made it advisable for us to report our further study and to outline the procedure in detail.

Spanish translation by J. H. Varela, M.D., St. Mary's Hospital, Tucson, Arizona.

Presented in Part, Arizona Regional Meeting, Arizona College of Physicians, Tucson, Arizona, December 12, 1959.

From the Clinical Research Laboratories, Tucson, Arizona. Aided by research grant, U. S. Department of Health, Education, and Welfare.

Read before the Scientific Assembly, 70th Annual Meeting of The Arizona Medical Association, Scottsdale, Arizona, April 28, 1961.

MATERIALS AND METHODS

This is a report on 3,940 tests performed on 2,403 individuals. These may be classified as follows:

A. Systemic Lupus Erythematosus	38
B. Chronic Rheumatoid Arthritis	226
C. Degenerative Joint Disease (Osteoarthritis)	108
D. Rheumatic Fever	26
E. Metabolic Joint Disease (Gout)	13
F. Discoid Lupus	12
G. Generalized Scleroderma	6
H. Polyarteritis	3
I. Dermatomyositis	3
J. No apparent disease	290
K. Miscellaneous diseases and controls	1,678

Of 1,678 patients 1,375 were tests performed on all of the hospitalized and out-patients of the

Dr. Leslie B. Smith, (left) new President of the Arizona Medical Association, congratulates Dr. Harry E. Thompson on winning the ARMA award for the best scientific paper of the year. This is the second year the award has been given.

Veterans Administration Hospital at Tucson, Arizona, for a period of one year.*

The 38 patients in the systemic lupus erythematosus group were selected with care, to exclude any whose diagnosis was not substantiated by the clinical and the physical findings or demonstration of adequate numbers of L. E. cells on successive occasions, or by biopsy or autopsy. No borderline or questionable cases were included in this study.

In the Pearson, Stern and McGavack method for cholesterol estimation, the serum to be tested is dissolved in a solution of P-toluene sulfonic acid. Normal serum and serum from patients with all but a few diseases are dissolved in this solution completely. When it was noted that sera from patients with acute systemic lupus erythematosus gave a precipitate, it was found that this precipitate could be used as a test for the disease and that it would differentiate systemic lupus erythematosus from other rheumatic and collagen diseases, and that it had both a diagnostic and prognostic value.

The method of performing the test, as given in the original publication, requires some minor changes and re-emphasis on certain points.

The test is simple (See Fig. No. 1), but requires attention to certain details. There is only one solution required for the test. This is made by dissolving 12.0 grams of P-toluene sulfonic acid hydrate $CH_3 C_6 H_4 CO_3 H$ in glacial acetic acid, pouring this into a 100 ml. volumetric flask and filling the flask to the mark with glacial acetic acid. The P-toluene sulfonic acid must be chemically pure (C.P.), colorless crystals. Eastman 984 has given good results. The colored technical grade cannot be used. The glacial acetic acid must be the analytic reagent grade. The test may be carried out in any dry test tube. We find small test tubes 10 or 15 mm. x 100 mm. useful.

Two milliliters (2.0 c.c.) of the P-toluene sulfonic acid reagent is placed in the test tube. One tenth milliliter (0.1 c.c.) of serum to be tested is added. It makes no difference whether the serum is added to the reagent or the reagent to the serum, provided the addition is made slowly. If no precipitate is found, the test is negative and the test discarded. If a precipitate is formed, the tube is shaken *10 times* with a quick flick of the wrist. If the precipitate remains after this shaking, the tube is set aside for 20 minutes and then examined. If the precipitate has disappeared, the test is negative and is dis-

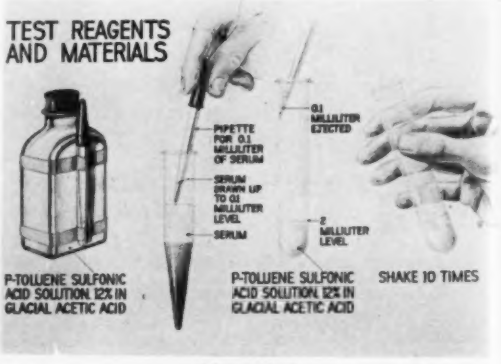


Figure No. 1

*This survey was made through the kindness and under the supervision of Dr. Joseph Plummer, Chief of Medicine at that hospital.

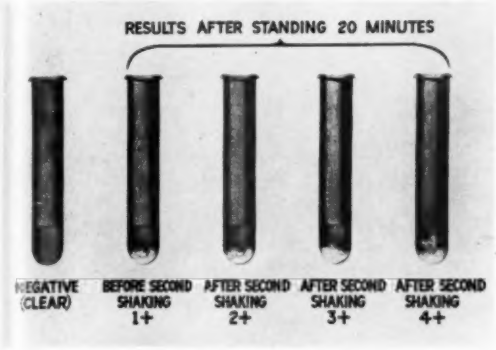
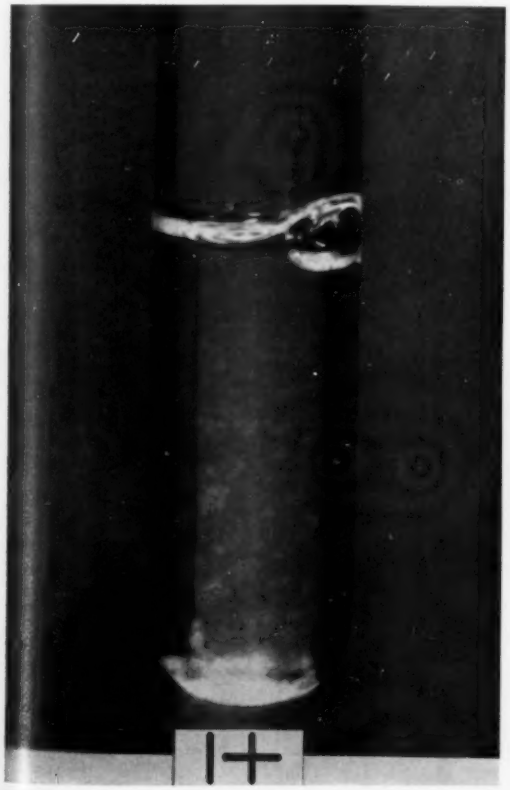


Figure No. 1 – Part 2

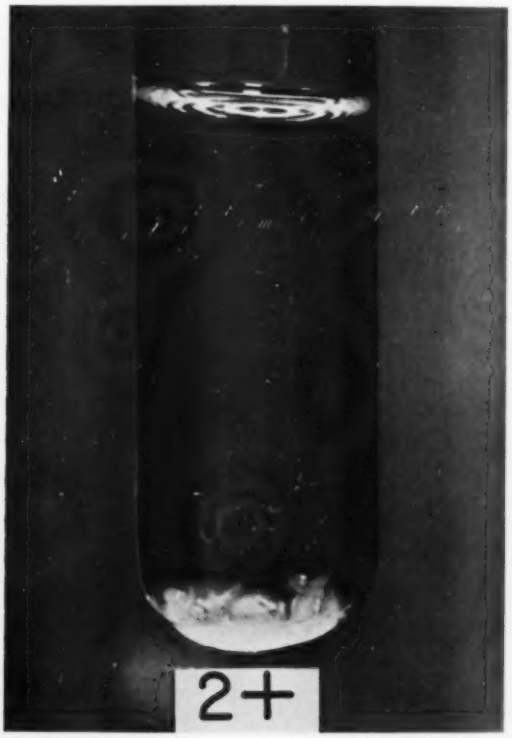
carded. If a precipitate is still present, the tube is again shaken 10 times. If the precipitate has now disappeared, the test is *one plus* (See photograph No. 1). If the precipitate remains, the test is *two plus* (See photograph No. 2). If it is heavy, it is *three plus* (See photograph No. 3), and if gel-like, clings to the side of the tube on inversion, and resists stirring or rubbing, the test is *four plus* (See photographs No. 4 and 5).



Photograph No. 1

In order to demonstrate that the positivity of the test (See Table No. 1) parallels the severity of the disease, the patients were divided into two classes – namely, – those acutely ill and those not actuely ill or in remission, whether spontaneous or induced by therapy. In the first group of 18, all of the patients gave positive tests. There were two 3 plus, ten 4 plus, five 2 plus and only one 1 plus. Five of these patients, who subsequently died, continued to show strong three or four plus tests in spite of the therapy given.

In the second group of twenty patients with systemic lupus erythematosus in remission or not acutely ill, fourteen were negative and six were 1 plus. When all 38 were grouped together 37% (fourteen) were negative; 18% (seven)



Photograph No. 2

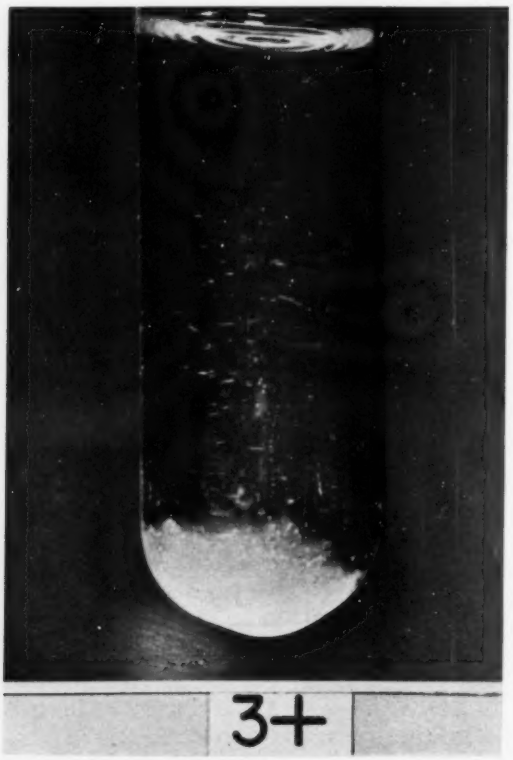
were 1 plus; 13% (five) were 2 plus and 32% (twelve) were either 3 or 4 plus. Therefore, in acutely ill patients, we may expect that approximately 67% will give a 3 or 4 plus test, which is diagnostic. A one or 2 plus test is usually considered highly suggestive, if the known false positives are ruled out.

The prognostic value of the test has three aspects: Firstly, the observation that patients who were severely ill and not responsive to therapy, always gave an unchanged and strongly positive 3 or 4 plus test. Secondly, patients who responded to therapy on serial testing showed a decreasing titre, and this decrease correlated well with the clinical response to therapy. Thirdly, patients in remission, even though the disease was apparently present but inactive, and even in the presence of L. E. cells, gave either negative or at the most 1 plus titres with this test.

No positive tests were given by three patients with severe polyarteritis, six patients with generalized scleroderma, and three patients with dermatomyositis. In all of these cases the diagnosis was confirmed by biopsy or autopsy. In a fatal case of polyarteritis, the test remained negative up to the time of death.

The sera of 226 patients with rheumatoid arthritis was examined. (See Table No. 1). These were tested serially. The cases were classified as follows: (A) 202 patients with adult rheumatoid arthritis (7 acute, 195 chronic); 193 of these were negative, one plus in 4, and two plus in 5. (B) Fourteen juvenile rheumatoid arthritic patients gave negative tests in 8, two plus in 3, and three plus in 3. (C) Ten rheumatoid spondylitis were negative in 9 and 3 plus in one. Out of all 226 patients with rheumatoid arthritis, 16 gave a test. It is evident that the juvenile arthritics gave the test the most often, six out of the fourteen giving a test, or 42% against 4% giving the test in the adult rheumatoid arthritics.

Photograph No. 4



Photograph No. 3

Other rheumatic diseases were tested such as, (1) degenerative joint disease (osteo-arthritis), 108 patients; (2) metabolic joint disease (gout), 13 patients; and, (3) rheumatic fever, 26 patients; and, in only one of these was there a positive test, (osteo-arthritis, 1 plus). 1,375 patients in the Veterans Administration Hospital and 303 private patients with miscellaneous diseases other than rheumatic or collagen diseases, were also tested. In 98% of these cases, the sera was negative and 2% were positive. Nine patients were one plus, five 3 plus, and five 4 plus. Of the 10 patients showing three or four plus tests,

Photograph No. 5

4 had hepatitis, 3 fulminating and fatal myeloma, and 2 a disseminated coccidioidomycosis with granulomatous involvement of the bone, and 2 were undiagnosed.

Of the 290 individuals tested who had no apparent disease, 99% were negative and 1% gave a one plus test.

DISCUSSION

The unique character of the Pearson, Stern, and McGavack method for cholesterol is the complete solution of the serum in the P-toluene sulfonic acid reagent, which renders the extraction of cholesterol from the lipoproteins of the serum unnecessary. This acid is a strong hydrolyzing agent which breaks the protein into small soluble molecules.

In the original account of this method, no mention was made of interfering precipitates forming in the control, nor were there any subsequent mention in the literature of such a precipitate. We reported the first description of such a precipitate. This indicates its rarity and shows there must be an abnormal complex substance occurring in the serum of patients with systemic lupus erythematosus or certain other diseases, which is slowly hydrolyzed and dissolved. The time it takes for this substance to dissolve is due either to the larger amount in the serum or to the increased complexity of its structure.

There is also a quantitative relation between the amount of serum, and the amount of reagent used. Small amounts of serum, whether normal or abnormal, go into solution more readily than larger amounts. Therefore, for an accurate test, (1) the amount of serum, (2) the amount of reagent and (3) the timing of the various steps of the test should be closely followed.

The substance giving this test does not seem to be the one responsible for L.E. cells or for the agglutination test for rheumatoid arthritis (the so-called rheumatoid factor). For instance, one patient who had severe systemic lupus erythematosus with a positive biopsy and on autopsy a confirmatory diagnosis, had a strongly positive unchanged test. L.E. cells could never be demonstrated in this patient. In other instances, we have observed precipitates to occur several months prior to the finding of L.E. cells. It has been noted too, that no precipitate or a negative test was obtained in systemic lupus erythematosus patients in remission, who had large numbers of circulating L.E. cells. The serum of patients with rheumatoid arthritis, containing large amounts of the rheumatoid factor, rarely gave a precipitate when tested.

Paper electrophoretic studies have not indicated exactly what protein fraction has been responsible for the production of the precipitate with P-toluene sulfonic acid. Electrophoretic patterns of patients with systemic lupus erythematosus, frequently show a reversed A/G ratio with shifts of various globulin fractions A_1 A_2 B and G and, while precipitates are obtained in such sera, similar patterns of patients not having systemic lupus erythematosus were negative.

This seems to bear out our impression that the large molecule or a complex protein is an abnormal protein, and that fractionation and identification by other methods than paper electrophoresis will be necessary. These studies are now being carried out in our laboratory.

CONCLUSION

In this study of 3,940 determinations made on 2,403 individuals, it was found that 100% of the sera from acutely ill systemic lupus erythematosus patients exhibited some precipitate with P-toluene sulfonic acid. In 67% the test appeared to be diagnostic with a strongly positive precipitate, 3 or 4 plus. Systemic lupus erythematosus patients responding to therapy or those in remission exhibited low positivity or negative tests, while those patients who exhibited unchanged strongly positive tests died.

Of the rheumatic diseases, only rheumatoid arthritis showed some precipitate. In adult rheumatoid arthritis, precipitates were found in 4% of the patients and in juvenile rheumatoid arthritis, 42% were positive. Rarely was a heavy precipitate encountered in these patients. Other rheumatic diseases, such as degenerative joint disease (osteo-arthritis), metabolic joint disease (gout) and rheumatic fever were negative. Other collagen diseases were negative when tested.

Of the non-rheumatic patients only 2% were positive and those diseases giving strong positives were hepatitis, multiple myloma and coccidioidomycosal granuloma of the bone. One per cent of the individuals with no apparent disease were positive.

From this study, the following conclusions seem warranted:

1. This test, if properly performed and interpreted, has a definite diagnostic and prognostic value for systemic lupus erythematosus.

2. There are few diseases which give false positive tests, and these may be distinguished from systemic lupus erythematosus by other means.

3. The precipitate observed with this test appears to be an abnormal precipitate not related to the lupus erythematosus or the rheumatoid factor.

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BIOGRAPHY

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Un Precipitado Fuera de lo Comun Dado por el Acido P-Tolueno Sulfonico en el Suero de Pacientes con Lupus Eritematoso Sistemico

Harry E. Thompson, M.D.

K. K. Jones, Ph.D.

Un reporte comproensivo subre el desarrollo de la prueba Thompson-Jones que es un instrumento de laboratorio muy valioso en manos de los autores. Sus resultados se presentan con claridad, y esta prueba merecera una cuidadoso evaluacion de los investigadores tanto clinicos como los interesados en el lupus eritematoso sistemico.

Este ensayo, de nuestro miembro, el Doctor Harry Thompson y su colaborador el doctor Jones,é escogido como ganador del Premio Anual del año VTFV *principalmente porque representa un descubrimiento original, cuyo valor va confirmado por evidencia obtenida por viá de investigación científica de la mas alto categoría.*

UN PRECIPITADO peculiar y fuera de lo común, que se encontró durante un examen de rutina en la estimación del colesterol por el método de Pearson, Stern y McGavack, condujo al desarrolo de una prueba para el Lupus Eritematos Sistémico. Esta prueba, de cuatro años de estudio, fue reportada ante el 9° Congreso Internacional sobre padecimientos reumáticos en Toronto, Canada en Junio de 1957 y publicada en el J.A.M.A. de Marzo de 1958. Ha habido amplio interés en esta prueba que ha ocasionado muchas preguntas y algunas críticas. Es aconsejable que nosotros reportemos nuestros estudios subsiguientes y deliniemos el procedimiento en detalle.

MATERIALES Y MÉTODOS

Este es un reporte de 3,940 pruebas hechas en 2,403 individuos que pueden ser clasificados como sigue:

A. Lupus Eritematoso Sistémico	38
B. Artritís Crónica Reumatoidea	226
C. Padecimientos degenerativos de las Articulaciones (Osteo-artritis)	108
D. Fiebre Reumática	26
E. Padecimientos Metabólicos de la Articulación. (Gota)	13
F. Lupus Discoide	12
G. Escleroderma Generalizado	6
H. Poliartritis	3
I. Dermatomiositis	3
J. Enfermedades no aparentes	290
K. Padecimientos miceláneos y controles	1678

De 1,678 pacientes, 1,375 fueron purebas hechas en todos los pacientes hospitalizados y de consulta externa del Veterans Administration Hospital in Tucson, Arizona, durante el período de un año.*

Los 38 pacientes del grupo con Lupus Eritematoso Sistémico fueron seleccionodos con cuidado, excluyendo cualquiera cuyo diagnóstico no fué comprobado por la clínica, exploración

Presentado en parte, en la junta regional de Arizona, Colegio Medico de Arizona, Tucson, Arizona, Diciembre 12, 1959.
De los Laboratorios de Investigacion Clinica, Tucson, Arizona. Auxiliado por el subsidio de investigacion del Departmento de Salud, Education, y Asistencia de los Estados Unidos de Norte America.
Leido ante la Asamblea Ccientifica de la Septuagesima Convencion Anual de la Sociedad Medica de Arizona celebrada en Scottsdale, Arizona, et 28 de abril de 1961.

*Este examen fue hecho bajo la supervision del Dr. Joseph Plummer, Jefe de Medicina en ese hospital.

física, o la demostración de un número adecuado de células L.E. en ocasiones sucesivas, o por biopsia o autopsia. Ningún caso dudoso fué incluído de este estudio.

En el método de Pearson, Stern, y McGavack para la determinación del colestrol, el suero que va a probarse se disuelve en una solución del ácido P-Tolueno Sulfónico; en suero normal y el suero de pacientes con casi todos los padecimientos, exceptuando unos cuantos, son disueltos completamente en esta solución. Se observo que el suero de pacientes con Lupus Eritematoso Sistémico Agudo, dió un precipitado, el cual podía ser usado como prueba para esta enfermedad, y que la diferenciaría de otros padecimientos reumáticos y enfermedades del colageno, y que tiene valor, tanto de diagnóstico como de pronóstico.

El método para llevar a cabo la prueba como se indica en la publiccación original, requiere algunos pequeños cambios y énfasis de ciertos puntos.

La prueba es simple, (véase fig. No. 1) pero requiere atención en ciertos detalles.

Se requiere una sola soluci;n para la prueba ésta se hace disolviendo 12 gramos de hidrato ácido P-tolueno sulf;nico. CH_3 C_6 SO_3 H en ácido acético glacial, vaciando éste en un matraz de 100 cc, y llenándolo hasta la marca con ácido acético glacial. El écido P-tolueno sulfónico, debe ser en cristales químicamente puros, (P.P.) El Eastman 984 ha dado buenos resultados. Los cristales colorados no deben ser usados. El ácido acético glacial, debe ser del tipo de reactivo analítico. La prueba puede llevarse a cabo en una probeta seca. Nosotros encontramos muy útiles las probetas de 10 ó 15 mm X 100.

Dos mililitros (2.0 cc) del reactivo del ácido P-tolueno sulfónico se colocan en una probeta y se le agrega la décima parte de un mililitro (0.1 cc) del suero que va a ser probado, no importa si se agrega el suero al reactivo o el reactivo al suero siempre y cuando se añada lentamente, si no hay precipitacion, la prueba es negativa y por lo tanto se descarta. Si se encuentra precipitado el tubo se agitará 10 veces con un rápido movimiento de muñeca, si perdura el precipitado después de agitarse, nuevamente se agitará otras 10 veces. Si el precipitado ha desaparecido, el resultado de la prueba es +1 (véase fotografía No. 1). (vease fotografía No. 2) Si es denso es +3 (véase fotografía No. 3 Y si es gelatinoso adhiriéndose a las paredes del tubo cuando se invierte presentando resistencia a la agitación, a fricción la prueba es +4 (véase fotografía 4-5).

Con el objeto de demostrar que la positividad de esta prueba está en proporción directa con la severidad del padecimineto, los enfermos fueron divididos en 2 grupos; aquéllos con enfermedad aguda y los subagudos o en estado de remisión; ya sea espontáneos o inducidos por el tratamiento. En el ler grupo de 18 todos los enfermos dieron resultado positivo, hubo 2 con 3+, 10 con 4 +, 5 con 2 +, y solamente 1 con 1 +.

Cinco de éstos enfermos que subsecuentemente fallecieron continuaron con 3 + + + o 4 + + + + a pesar del tratamiento dado.

En el 2 grupo de 20 enfermos con Lupus Eritematoso Sistémico en estado de remisión, o casos subagudos, 14 fueron negativos; y 6 dieron 1 +.

Cuando se reunieron los 38 casos 37% (14) fueron negativos; 18% (7) fueron + 1; 13% (5) fueron + 2 y 32% (12) fueron ya sea + 3 o +4. Por lo tanto en enfermos agudos podemos esperar que aproximadamente 67% dará +3 o +4, lo cual es diagnóstico. Una prueba +2 generalmente se considerara altamente sugestiva si los falsos positivos son descontados.

El valor diagnóstico de la prueba tiene 3 aspectos: Primeramente, la observación en que enfermos muy graves y que no respondían al tratamiento daban un resultado altamente positivo +3 o +4 invariablemente.

En segundo lugar, enfermos que respondieron al tratamiento, mostraron en las pruebas en serie un descenso en la titulación, y este descenso se correlaciona con la respuesta clínica al tratamiento. 3° pacientes en estado de remisión aun cuando la enfermedad estuviera aparentemente presente pero inactiva, y aún con la presencia de células de L.E., ambos fueron resultados negativos en la prueba.

Pruebas no positivas fueron dados por 3 pacientes con poliartritis severa, seis con esclerodermа generalizado y tres con dermatomiositis, siendo en todos estos casos confirmado el diagnóstico por biopsia o autopsia. En un caso fatal de poliartritis la prueba persistó negativa hasta el momento de la muerte.

El suero de 226 pacientes con artritis reumatoide fué examinado (véase tabla No. 1) Esos fueron probados en serie, los casos se clasificaron com sigue: (A) 202 pacientes (adultos) con artritis reumatoide (7 agudo y 195 crónicos); 193 de éstos fueron negativos; +1 en 4 casos y +2 en 5 casos. (B) Catorce pacientes jóvenes con artritis reumatoideo dieron resultados positivos en 8 de los casos, + 2 en 3 y + 3 en 3. (C) En 10 casos de spondilitis reumatoideo 9 fueron negativos y 3 + en uno.

De los 226 enfermos con artritis reumatoideo, se probaron 16 casos, o sea 42% contra el 4%, haciendo la pruebra en adultos con artritis reumatoide.

Otros padecimientos reumáticos fueron probados tales como: (1) Padecimientos degenerativos de la articulación (osteoartritis), 108 pacientes; (2) padecimientos metabólicos de la articulación (gota) 13 pacientes; y (13) Fiebre reumática, 26 pacientes y solamente en uno de éstos se obtuco una prueba positiva (osteo-artritis, +1). 1375 pacientes en el Veterans Administration Hospital y 303 enfermos particulares con un variedad de padecimientos que no son del colágeno ni reumáticos fueron tambien probados. En el 98% de estos casos el suero fué negativo y 2% fué positivo.

Nueve enfermos fueron + 1. 5 fueron + 3, y otros 5 fueron + 4. De los 10 pacientes que mostraron +3 o +4, cuatro tenían hepatitis, 2 mieloma fulminante ye 2 coccidiomcosis diseminada con cambios granulomatosos del hueso y 2 no fueron diagnosticados.

De los 290 individuos examinados que no tenían ningún padecimiento aparente, 99% fueron negativos y 1% dió resultado positivo +1.

DISCUSIÓN

El carécter especial del método Pearson, Stern y McGavack para colesterol; es la completa solución del suero en el reactivo del ácido P-tolueno sulfónico, suministra la extracción del colesterol de las lipoproteinas del suero sobrante; es ácido es un fuerte agente hidrolizante que descompone las proteinas en moléculas más pequeñas y solubles.

En la relación original de este método, no se hizo mención de los precipitados que interfirieron y se formaron en el control, as como tampoco se menciona en la literatura subsiguiente tal precipitado. Nosotros reportamos y describimos tal precipitado. Este indica su rareza y demuestra que debe haber una substancia compleja anormal en el suero de los pacientes con Lupus Eritematoso sistémico, o en ciertos padecimientos, que es lentamente hidrolizada y disuelta. El tiempo que tarda esta sustancia en disolverse es debido, ya sea a la mayor cantidad de suero o al aumento de complejidad en su estructura, hay además una relación cuantitativa entre la cantidad de suero y en la cantidad del reactivo usado. Pequeñas cantidades de suero ya sea normal o anormal, se deluyen más fácilmente en la solución que cantidades mayores. Por lo tanto para una prueba mas exacta, (1) la cantidad del suero, (2) la cantidad del reactivo, y (3) la secuencia en los pasos de la prueba deben ser llevados al pie de la letra.

La substancia que da esta prueba no parece ser la responsable de los células de L.E. o de la prueba de aglutinación para la artritis reumatoide, (el tal llamado factor reumatoideo) por ejemplo, un paciente que teñia suero con Lupus Eritematoso sistémico, con biopsia positiva y en autópsia un diagnóstico confirmado, dió un fuerte resultado positivo. Célulos de L.E. nunca pudieron ser demostrados en este enfermo. En ocasiones hemos encontrado precipitados varios meses antes de encontrar célulos de L.E.

Se ha notado tambien que en enfermos en remisión no ha habido pruebas negativas, de L.E. así como tampoco el precipitado, y que tenían gran cantidad de células de L.E. circulando.

El suero de enfermos con artritis reumatoide que contiene el factor reumatoide en gran cantidad, rara vez dió el precipitado en la prueba. Estudios electróforos en papel no han demostra-

do exactamente, que fracción de proteína ha sido la responsable de la producción del precipitado con el ácido P-tolueno sulfónico.

La gráfica electroforética en pacientes con Lupus Eritematoso sistémico, con frecuencia dan un cociente A/G invertido, con cambios de varios fracciónes de las globulinas A_1 A_2 B y G y mientras se obtiene el precipitado en tal suero, así vemos en gráficos de pacientes que no tenían Lupus eritematoso sistémico fueron negativos.

Esto parece afirmar nuestra impresión de que las moleculas grandes o una proteína compleja es una proteína anormal, y que el fraccionamiento o identificación por otros métodos distintos al papel electroforético es necesario. Estos estudios se estan llevando a cabo en nuestro laboratorio.

CONCLUSION

En este estudio de 3,940 determinaciones hechas en 2,402 individuos, se encontró que el 100% de suero pacientes con Lupus eritematoso sistémico agudo, mostró precipitado con el acido P-tolueno sulfónico. En 67% la prueba confirmó el diagnóstico con un precipitado altamente positivo de + 3 o + 4.

Enfermos con L. E. que respondieron al tratamiento o aquellos en remisión dieron un resultado positivo atenuado o bien negativo. Mientras que aquéllos que dieron un resultado altamente positivo fallecieron.

De los padecimientos reumáticos, únicamente la artritis reumatoide dió precipitado.

En la artritis reumatoide de los adultos se encontró el 4% del precipitado y en artritis reumatoide juvenil el 42% fué positivo.

Rara vez se obtuvo un precipitado denso en estos enfermos. Otros padecimientos reumáticos tales como, enfermedades degenerativas de la articulación (osteo artritis), enfermedad metabólica de la articulación (gota) y fiebre reumática fueron negativos. Otros padecimientos del colágeno fueron negativos al ser probados.

De los enfermos no-reumáticos únicamente el 2% fué positivo y aquellos padecimientos en que la prueba fué altamente positiva, la hepatitis, mieloma múltiple y granuloma coccidiomicótico del hueso. El 1% de individuos con padecimientos no aparentes fué positivo.

De este estudio, las siguientes conclusiones parecen ser justificadas:

1. Esta prueba, debidamente llevada a cabo e interpretada, tiene definitivamente un valor diagnóstico y pronóstico para el Lupus eritematoso sistémico.

2. Hay unds pocos padecimientos que pueden dar pruebas falsopositivas y estos pueden diferenciarse del Lupus eritemotoso sistémico por otros medios.

3. El precipitado que se encuentra en esta prueba ha demostrado ser un precipitado anormal y no está relacionado con el Lupus eritematoso o el factor reumatoide.

HILL-BURTON GRANTS

State of Arizona

The Department of Health, Education, and Welfare reports through the Washington Office, American Medical Association, that the status of all Hill-Burton grants for the State of Arizona is:

COMPLETED AND IN OPERATION: 16 projects at a total cost of $22,080,140, including federal contribution of $7,438,458 and supplying 1,226 additional beds.

UNDER CONSTRUCTION: 13 projects at a total cost of $7,896,418, including federal contribution of $2,749;510 and designed to supply 278 additional beds.

APPROVED, BUT NOT YET UNDER CONSTRUCTION (including above): 3 projects at a total cost of $1,388,520, including $575,000 federal contribution and designed to supply 40 additional beds.

The Early Management of Acute Hand Injuries — An Abstract —

John Ricker, M.D.

Because of the prevalance of injuries to the hand in industry and in home accidents and the economic and social loss resulting from them, it is important for those treating hand injuries to have a working knowledge of the general principles of early management.

In most instances the final functional result directly depends upon the success and skill of the primary care. The aims of primary repair of hand injuries are healing without infection, the maintenance of functional position, and the early return of good motion and flexibility.

THE IMPORTANCE of proper care of hand injuries was stressed. It was pointed out that injured hands are responsible for considerable economic and social loss. It has been estimated that at least a third of all industrial injuries are to the hand and forearm. Many cause periods of temporary and total disability. Since everyone uses his hands in work or play the loss of even a portion of the hand is quite a handicap. Final function of the hand and the success of secondary reconstructive surgery if any depend directly on the proper primary care of hand injuries.

Anatomy

The anatomy of the hand was briefly reviewed with special attention to distribution and location of nerves, location and function of tendons, skin creases, and the bone and joint structure.

General Principles

Wounds should be covered securely and the extremity immobilized as soon after the injury as possible. Patient should be properly sedated and in most instances lying down. Careful evaluation of the injury is made by first obtaining a history as to type of injury, causative agent, place and time of injury, and what if any prior treatment or first aid has been given. Age, occupation, and general physical condition are also important. An examination of the motion, sensation, and circulation is made preferably without uncovering the wound. It is not necessary to peek or probe into the wound to diagnose several tendons or nerves. X-rays are indicated in crushing or bruising types of injuries and in most types of machine injuries, and should be taken whenever practicable.

Surgical care and repair is carried out under ideal conditions in an operating room except in the most minor superficial injuries. Adequate anesthesia in a bloodless field obtained by use of a pneumatic tourniquet is used.

All wounds and surrounding skin are carefully cleaned with surgical soap and water. The wounds are irrigated with sterile, non-irritating solution, either normal saline or plain water, the amount depending on the type and severity of the injury. Debridement is done removing dead, devitalized, and contaminated tissue followed by a second irrigation. Following debridement the wound is evaluated and repair is done. In general any wound, unless it is grossly contaminated or inflamed, can be closed up to 6

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or 8 hours after injury if debridement is complete. Primary skin closure is done in practically all cases.

In repairing injuries of the hand which have multiple tissues involved, of first importance is adequate skin coverage preceded by careful debridement and cleansing of the wounds. Next is restoration of a functional position by adequate fixation of bones and joints. Everything else is of secondary importance and can be taken care of at a later date.

Fingertip Injuries

These consist of simple bruising requiring only supportive bandage and possible drilling of the nail to severe avulsed and lacerated wounds involving the bone and soft tissues. As much of the fingertip as possible should be salvaged. The use of split thickness grafts taken from the same extremity with a razor blade is a simple way of repairing skin defects that can not be closed otherwise.

Skin

Injuries involving the skin alone are fairly common. Primary healing can mean a very short period of working disability and little or no permanent disability. Simple wounds are cleaned up and closed without tension. Avulsed flaps, especially if there has been contusion and considerable trauma to the flaps, require careful evaluation of the viability of the flaps. If not viable, they should be discarded and replaced by split thickness skin graft. If there is loss of skin overlying joints, tendons, or nerves it is desirable to rotate a small local flap of skin over this area and graft the defect with split skin. Firm pressure dressing should be applied with the finger held in a position of function.

Tendons and Nerves

Tendon injuries can not always be taken care of primarily. Flexor and extensor tendons require different treatment. In general extensor tendons are repaired primarily if at all possible since they are not in sheaths, they are usually superficial, and delayed repair is difficult. Flexor tendons are repaired only under optimum conditions in the hand, and those where both tendons are severed opposite the proximal phalanges of the fingers are seldom repaired primarily.

Nerve injuries frequently accompany tendon injuries but can be separated. Under ideal conditions and in incised wounds of the nerve, primary repair is usually easy and successful. In lacerated or avulsed wounds of the nerve, primary repair is difficult and secondary repair is much more satisfactory. A certain amount of experience and skill is required for nerve repair as well as tendon suture, and repair of these structures should not be attempted by the inexperienced.

Fractures

Simple fractures can usually be reduced under local anesthetic and the finger immobilized in a functional position using aluminum splints, Boehler wires, or plaster of paris splints. Fractures of the distal phalanx require no special treatment except those with avulsion of the extensor tendon. Fractures of the proximal phalanx require considerable flexion of both the proximal and middle joints to neutralize the tendon pull. Fractures of the distal end of the metacarpal sometimes require acute flexion of the middle and proximal joints of the corresponding finger for accurate reduction and maintenance of position. Fractures of the shafts of the metacarpals and carpal bones usually require a simple wrist splint holding the hand in a functional position.

Compound fractures frequently can be immobilized by fine Kirschner wires in order to facilitate the removal of dressings and splint for inspection of wounds.

Compound and Severe Injuries

As much of the hand as possible should be salvaged. The only criterion for primary amputation is loss of blood supply. Primary wound healing takes precedence over all other factors. Repair of deeper structures should not jeopardize wound healing. It is not desirable to repair tendons or nerves when injury is to skin, tendon, and bone at the same level. Sometimes it is desirable to sacrifice a badly injured finger using its skin for coverage of adjacent fingers or adjacent parts of the hand. All fractures should be immobilized by internal fixation if possible, and the entire hand put up in a position of function.

Amputations

As much of the member as possible should

be saved. All functioning portions of the phalanx should be saved if satisfactory skin coverage can be obtained. If a more satisfactory amputation stump can be obtained by taking off the base of a non-functioning more distal phalanx, this should be done. All viable tags and remnants of skin can be used for stump coverage. Split thickness skin grafts are the easiest and in many instances the most satisfactory coverage for ends of stumps and defects.

The optimum sites of amputation are through the middle third of the distal phalanx, distal third of the middle phalanx, distal third of the proximal phalanx, and through the base of the proximal phalanx. The head of the metacarpal should always be saved to keep the arch and strength of the palm. For cosmetic purposes the second and fifth metacarpals are sometimes removed in their distal two-thirds. Length of thumb should be preserved at all cost.

A single finger or thumb is of very little functional value but many times should be preserved to determine further treatment. Even the proximal row of the carpus should be saved; however, the distal end of the radius and ulna does not make a satisfactory stump and amputation through the lower third of the forearm is better.

FDA COUNTERFEIT DRUG SURVEY

The Food and Drug Administration released the results of its nation-wide investigation of drug counterfeiting.

Almost 2,700 samples were collected from 900 drug stores selected at random between January 24, 1961 and March 30, 1961. Of these samples, 9 samples from 9 stores were found to be counterfeit. Six drugs were selected for sampling, all of them known from previous experience to have been counterfeited.

Commissioner of Food and Drugs George P. Larrick said that all of the counterfeits whose origin has thus far been determined came from the General Pharmacal Co., Inc., Hoboken, N. J.

(U. S. Department of Health, Education and Welfare, Food and Drug Administration)

Stress and the Practice of Medicine

Edward J. Kollar, M.D.

An interesting and stimulating article with a comprehensive view dealing with a common problem which occurs daily in the practice of medicine. A well organized discussion of the depressive state which frequently is masked by other symptomatology. This article should be of interest to all readers, and particularly of value is the excellent reference index.

INTRODUCTION:

THE OBJECTIVES of this paper are first to define psychological stress in terms of the emotion of depression, as well as the emotions of anxiety and anger; and second, to show the relevance that psychological stress has to medicine in general.

Stress has a number of meanings. In common usage it indicates hardship, adversity, and sometimes forces applied to a person to compel or extort. In physics, stress denotes internal forces which resist changes of form or volume of matter. In biology and medicine, stress is used to indicate either external forces or stimuli which impinge on the organism, or the effects of such forces and stimuli within the organism.

There are a number of stress models which have been postulated by workers in the area of psychosomatic medicine. These models have been reviewed in detail elsewhere(1). Although these models vary in detail, they are all in agreement in assigning a primary role to anxiety. A composite statement is that psychological conflict or stress produces anxiety, which is an experience so painful to the individual that he defends against it with the symptomatology of neuroses, psychoses, or psychosomatic disorders.

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This linking of psychological stress to anxiety is a corollary of the unitary hypothesis of emotions of displeasure first formulated by Freud(2). This hypothesis holds that anxiety is the basic or primary emotion of displeasure and the source of all other emotions of displeasure. A diagramatic composite statement of these models is as follows:

Psychological Stress	Anxiety
Pathology	(Depression (Anger (Guilt (Disguest, etc.

When anxiety is defined in terms of psychophysiological mechanisms, reference is always made to Cannon's principle of "flight or fight" which is a statement of sympathetic activation. Thus, stress is represented as an excitatory phenomenon. The only exception is Alexander's model(3) which includes a concept of "vegetative retreat" which is an inhibitory-conservatory phenomenon medicated by the parasympathetic system. A schematic statement of Alexander's model is as follows:

	Tissue Change Fight or Flight (Sympathetic)
Psychological Stress	Anxiety
	Vegetative Retreat (Para-sympathetic) Tissue Change

There is a paradox in this model in the sense that a basic excitatory state (anxiety) finds expression through inhibitory-conservatory channels (vegetative retreat). If anxiety is basic, then there should be evidence for this in terms of sympathetic activity, not para-sympathetic. Other reasons for rejecting Alexander's model are discussed elsewhere(1). A more ismple explanation is possible, if one accepts the hypothesis that stress may directly evoke inhibitory-conservatory responses as well as excitatory. Stress defined in this manner may be stated schematically as follows:

Psychological Stress	Pathology Inhibation Pathology Excitation

In the next portion of this paper both biological and psychological evidence will be cited to support this point of view.

PHENOMENON OF SUDDEN DEATH:

Richter(4) has recently described a mechanism of sudden death in wild rats, due to inhibitory phenomena and mediated through the para-sympathetic nervous system. He found that wild rats put into an agitated container of water died in a few minutes. White laboratory rats under the same conditions swam for 40 to 60 hours before drowning. Cardiograms obtained by attaching electrodes to the animals before they were immersed showed an increase in heart rate in the white laboratory rats. The wild rats showed a cardiac arrest and at autopsy their hearts were in a state of diastole and filled with blood. If the wild rats were repeatedly immersed and freed before they were placed in the experimental containers they then behaved like the white rats, and attempted escape by swimming for long periods of time. Adrenalectomy did not protect the wild rats from sudden death. Cholinergic drugs made white rats prone to sudden death. A few wild rats died simply while being held in the hand.

As Richter points out, this is not a "fight or flight" response. Rather, it seems to be a reaction to hopelessness and despair. The animals simply gave up.

Richter suggests that "voodoo" death(5) and the psychogenic deaths reported in inmates of concentration and POW camps are due to similar phenomena. These individuals confronted by adverse life situations literally gave up. Physician inmates of POW camps reported that individuals overwhelmed with despair and hopelessness took to bed, turned their faces to the wall, and died. These deaths could be averted if the individuals could be stimulated into anger or into some interest in events about them(6).

STARVATION

During hunger an individual is in a state of excitation as is evidenced by a sense of tenseness, or anxiety. In starvation where there is actual tissue depletion this excitatory state gives way to a profound inhibitory-conservatory state. Keys(7) reports that the starving man has a low metabolic rate, bradycardia, hypotension, hypothermia, and great muscular weakness. In man neither acute nor chronic starvation produces an increase in 17 ketosteroid excretion; thus ruling out the possibility of adrenal cortical activation(8). Starving man conserves energy in every possible way. He looks depressed and he feels depressed. He is quiet, somber, apathetic, and slow in motion. Neurotic symptoms are always uncovered; psychotic symptoms rarely so. There is usually a recovery from these neurotic symptoms upon nutritional rehabilitation.

A number of animals are able to adapt to seasonal diminution of food supplies or other stressful environmental conditions by entering into dormescent states of hibernation and estivation(9). Even man has been reported to have a capacity to enter into a similar state which might be called 'winter sleep' in Arctic regions(10).

SLEEP DEPRIVATION:

There are a number of studies which document sleep deprivation as a psychological stressor,(11,12,13). In addition to fatigue, psychomotor retardation and irritability, sleep deprivation results in psychotic-like symptoms such as illusions, hallucinations, marked mood alterations and personality disorganization. In a recent study,(14) a definite parasympathetic shift of autonomic activity was reported. This shift was manifested by increases in skin resistance, decrease in blood pressure and heart rate, and hy-

pothermia. Excretion of 17 ketoseroids remained unchanged, ruling out the possibility that this is stress as defined by Selye. Although further work is required, it appears that sleep deprivation, working in a manner anolagous to starvation, evokes a state of stress with marked inhibitory manifestations and a para-sympathetic shift.

MATERNAL DEPRIVATION IN THE NEONATE:

Margaret Ribble,(15,16) has described a comatose state in new-born infants which occurred when they were subjected to their mothers' total rejection. These mothers were teen age girls who were illegitimately pregnant and totally lacking in maternal feelings for their infants. They frustrated their infants' first attempts to suckle because of their clumsy handling of the infants and a lack of erectile response of the nipples. After a few frustrating efforts at nursing these infants became stuporous, developed irregular respiration, extreme pallor and diminished sensitivity. It was as if they had regressed to an intrauterine level of existence in which sucking was not necessary. They were listless, apathetic, and refused their feedings. Gastric gavage did not seem to change the condition. Saline clysis, I.V. feedings, and blood transfusions were often required. After recovery, these infants had to be taught to suckle. Thus, the neonate responds to the mother's total rejection with marked inhibition and depression of biological processes. It is not likely that this phenomenon is triggered by psychological mechanisms. The most plausible explanation is that this is a response at a biological level to the lack of physical stimuli needed to maintain homeostasis in the neonatal period.

OBJECT LOSS IN THE INFANT:

Spitz,(17,18) reported on the effects of maternal deprivation of infants with sufficient ego development to be able to recognize and relate to their mothers. He observed a number of normal infants who had a minimum of 6 months' satisfactory relationship with their mothers before they were separated and put in an environment where they had to share the attention of one attendant with eight to ten other infants. There was marked weight loss and arrest of physical, psychological, and social development. By the end of three months these infants lay prone in a weepy insomnia, with averted faces fixed in a rigid expression. Spitz called this condition anaclitic depression and compared it to clinical depression in adults. During the first three to five months of maternal deprivation, a rapid remission could be produced by the return of the mother or an adequate substitute. If deprivation persists beyond this critical period the condition is irreversible and development deteriorates to a distressing degree. Sitting, standing, walking and talking are not achieved, even by the age of four. Marasmus and death are a frequent consequence. In spite of adequate dietary and sanitary precautions, nearly 40 per cent of Spitz's subjects were dead at the end of two years. The response of these infants to maternal deprivation was a total psychosomatic reaction with marked inhibitory and depressive features.

OBJECT LOSS IN THE ADULT

Although grief is a universal and intensely painful experience, surprisingly little has been written on this subject. Freud(19), and Lindeman(20), have made the most important contribution to the literature. Grief, or the affect depression, is the emotional response to the loss of an object of gratification. Grief work is the painful attempt to adjust the individuals' psychic representations of external reality so that the image of the lost object is relinquished to correspond with the absence of the object in actuality. It is more than a simple readjustment to an environment in which the object is missing. It is an attempt to free emotional attachments to the lost object so that new relationships may be formed. Grief is so painful that it can be managed only in recurrent attempts. It ceases only when the image of the lost object has been dislodged from psychic reality. Grief, like anxiety, is a psychosomatic reaction with somatic as well as psychic distress. This distress comes in recurrent waves and is manifested by tightness in the throat, choking and shortness of breath, need for sighing, empty feelings in the abdomen, lack of muscular power, disturbances of appetite, and other bodily functions. Unfortunately, most of our physiological data on grief comes from subjective reports. As compared with anxiety, there are very few laboratory studies.

Because grief is so painful it is frequently not

managed in a straightforward way and finds expression in a variety of morbid reactions. Lindeman discusses these morbid grief equivalents in some detail. Most important for this discussion are the psychosomatic illnesses which develop in lieu of mourning. Lindeman points out that such diseases as ulcerative colitis, rheumatoid arthritis and asthma, frequently appear as morbid substitutes of normal grief.

DEPRESSION AND PSYCHOSOMATIC DISEASE

Lindeman's observations that psychosomatic illnesses may develop as a pathological equivalent of grief has been confirmed by the work of many others. Engel's work with ulcerative colitis patients(21), and Chambers' and Reiser's studies of patients with congestive heart failure(22), illustrate the importance of real or phantasied interruption of key relationships in these illnesses. There are many other reports dealing with other diseases that seem to develop in a psychological setting of atypical depression or grief following a real or phantasied object loss. These include diabetes mellitus(23), functional uterine bleeding (24), pernicious anemia(25), Raynaud's disease(26), rheumatoid arthritis(27), asthma(28), tuberculosis(29), thyrotoxicosis(30) and lupus erythematosis(31). Other writers, including Benedek(32), and Schmale(33), have emphasized the importance of depression as a basic psychosomatic mechanism.

DEFINITION OF STRESS

In view of the evidence cited, it seems reasonable to define both biological and psychological stress as those forces and stimuli which produce psychobiological states of either excitation or inhibition-conservation. Either psychological or physiological stimuli are capable of evoking these states. Agents which act directly to produce tissue damage may trigger a state of excitation at a biological level. If the organism is deprived of some necessary substance, stimulus, or experience required for homeostasis, the state of inhibition-conservation generally occurs. The psychological stimuli which evoke a state of stress arise from situations which the individual interprets to mean that a source of gratification is either threatened or has been lost. If the individual feels his source of gratification is threatened, the response is excitatory (fight or flight); if the individual passively experiences this state of excitation, it is called anxiety. Should the excitatory state be actively directed at the source of danger, it is called aggression – (rage or anger). If the individual feels he is deprived of gratification, the response is depression (grief). Anxiety, aggression, and depression are psychobiological states with characteristic patterns of autonomic activity. Anxiety and aggression are expressed mainly through adrenosympathetic mechanisms. Anxiety is accompanied by an adrenalin pattern of autonomic activity, and aggression with a nor-adrenalin pattern(34,35). Depression is expressed physiologically, at least in part, through para-sympathetic mechanisms. Stated schematically:

Stress	Anger (active defense) (nor-adrenalin)
	Excitation
	Anxiety (passive submission) (adrenalin)
	Inhibition-Conservation
	Depression (hopelessness) (para-sympathetic)

Anger, anxiety and depression are basic ego reactions determined in part by the way in which the individual evaluates the stress that confronts him. Anxiety and anger are always anticipatory phenomena even though they may be the reaction to a present danger. There is always some degree of helplessness associated with anxiety and anger. Depression is a consummative phenomenon from which there is no reprieve. One may feel helpless in the face of anxiety but one is not without some degree of hope. In the face of depression one is not only helpless but one despairs of hope. Thus, when an individual is stressed, he always experiences some degree of helplessness and/or hopelessness.

STRESS AND THE EVALUATION OF DISEASE PROCESSES

The question naturally arises as to how this definition of stress may be used in the office and hospital practice of medicine. Perhaps the most obvious is its value in clarifying and classi-

fying the stressful life situations which trigger the so-called classical psychosomatic illnesses. For instance, the kind of stress that triggers an attack of paroxysmal tachycardia differs from the stresses associated with ulcerative colitis and hypertension.

Paroxysmal tachycardia may be viewed as an atypical anxiety attack with an excessive cardiac rate which is triggered in predisposed individuals when they are threatened with the loss of some important source of gratification. An example is the case of a successful building contractor who, although he was happily married, had a compulsive need to prove his manliness through indulgence in numerous extra-marital affairs as well as questionable business activities. His first atttack of paroxysmal tachycardia occurred while he was involved in the seduction of a new maid in his household. At the point of success a car drove into the driveway. This he took to be the untimely return of his wife. His second attack occurred during a business conference while a colleague was in the process of exposing a shady deal perpetrated by the patient. This attack prevented the expose and led to his seeking first medical and then psychiatric help. Subsequent attacks occurred in similar situations of threat or danger. It is of interest that the relationship of the stress to the attacks was not at all obvious to the patient. However, an awareness of this gained in psychotherapy led him to re-evaluate his attitudes and values. He stopped his extramarital exploits and the corner-cutting in business. With this change in behavior his attacks of paroxysmal tachycardia subsided.

Ulcerative colitis is not activated by anxiety-producing stress. Rather, it occurs in predisposed individuals when they perceive a key relationship or an important source of gratification to be lost. Ulcerative colitis occurs in a psychological setting of atypical depression. An example is the case of a young man who was in great conflict about marrying a girl of his choice because his domineering mother, on whom he was extremely dependent, refused to accept the girl. His decision was forced when he impregnated the girl. His mother rejected him in a bitter quarrel and within 24 hours he suffered an explosive onset of his illness. His disease has continued over a number of years in chronic form with exacerbations following incidents which he interpreted as rejection or withdrawal of love by his wife. Many of these incidents were seemingly trivial or unfounded. Anxiety-producing situations seemed to have no effect on the course of his illness. For instance, in his work as a liquor store salesman he was in a number of hold-ups, but suffered no flare-ups of his illness. He even went through a period of intense castration anxiety when he entered a hospital for a bilateral herniorrhaphy. Both he and his wife feared that this might interfere with his sexual functions. It is of interest that although this intense fear had no effect on the course of his ulcerative colitis it did lead to a better sexual adjustment.

Hypertension may develop in predisposed individuals who are reacting to stress with smoldering repressed anger. An example is the case of a 43-year-old male with severe hypertensive cardiovascular disease which had responded poorly to a variety of medical programs. His blood pressure remained at unremittingly high levels and on two occasions he was hospitalized because of cardiac decompensation. It was during his second hospitalization that his case was presented in a psychosomatic conference. He became involved with the interviewing psychiatrist in an intensely dramatic way; relating to him as though they were in a consultation room and not in a large conference. With great intensity he discussed the great resentment he had harbored for twenty years for his family because they had not accepted his wife. Later that day he expressed the same resentment for the first time to members of his family who came to visit him. His blood pressure dropped markedly to a more physiological level and remained there during a follow-up period of several months. This drop was quite impressive because he had not responded previously to any of a large number of hypotensive drugs. It had been thought that his hypertension was organically fixed.

The concept of psychological stress also has value in understanding illnesses which are not ordinarily considered to be psychosomatic. In considering the epidemiology of all illnesses it is important that we look beyond simple cause and effect etiological relationships. It is becoming increasingly clear that an adequate concept of etiology envisions pathology as arising from

multiple simultaneous causes. It is not enough to know that a person is diseased. It is necessary to know the circumstances, the life situation in which he became diseased. There is increasing evidence that many people do not simply become ill because of a fateful incident, an accidental encounter with a pathogenic agent, or the untimely emergence of some unfortunate innate pathophysiological imbalance. There are convicing studies which show that many patients in general hospitals become ill for the first time, or suffer an exacerbation of a chronic process, or submit to some elective surgical procedure at a time when they are undergoing a stressful life situation.

The importance of depression and depressive equivalents as the response to a stressful life situation causing a person to make a plea for the patient role, can be seen in any general hospital patient population. During five years experience as chief of a psychosomatic service of a large general hospital I gradually became aware of and was tremendously impressed with the large number of patients who had masked depressions, sometimes behind a smiling, amiable facade. Of course it can be argued that anyone who is ill is entitled to react to his illness with depression, a fact with which I am indeed in complete agreement. The point, however, which I wish to emphasize is that these individuals were depressed before they developed the illness which caused them to petition for the patient role. These individuals had been confronted with a stressful life situation which either acutally deprived them, or which they interpreted to deprive them, of some needed source of gratification. Whether their evaluation of their plight was realistic or neurotically distored did not matter. They felt overwhelmed and unable to cope with the stress. Their mood and attitude regarding this stress was uniformly that of helplessness and/or hopelessness. It was in this psychological setting that they became ill and made a plea for the patient role. These patients were found on all wards and in all diagnostic categories. They came to the hospital asking for more than relief from somatic disease. Although their pleas were disguised, even from their own awareness, and oftentimes mute, they were nonetheless looking for understanding and help — and perhaps most of all, hope.

STRESS AND THE DOCTOR-PATIENT RELATIONSHIP

It is one of the anachronisms of medical practice that the patient brings with him forces which are disturbing to the physician and which tend to cause the physician to ignore the patient and defend himself. Many patients come to us not only with physical hurts or some kind of physical distress, but they are either covertly or overtly angry, frightened, or depressed. These are qualities in patients which automatically tend to set off defense reactions within the physician. The hurts and the distress of the patient threaten to stir into awareness the physician's own hurts, misfortunes, and inadequacies. One of our forms of defense is to shift our focus from the patient to the things we are doing for the patient. We become very busy, sometimes frenetically so and we don't have time to see the patient as a person who is suffering. We attempt to depersonalize him through the magic of replacing his name with a label. He becomes, for example, the fracture in Room 10, the suspect T.B. in isolation, the terminal C.A., and even the "crock." We narrow our view of what constitutes pathology and what entitles a person to make a plea for the patient role. However, all these machinations can be seen as disguised efforts to defend against our own anxieties and depressions. In short, we forget to treat the patient because we are so busy treating ourselves.

The question arises as to how a physician can avoid such pitfalls. How can he combat the disturbing effects of the patient's moods and his attitudes of helplessness and hopelessness? If the patient is responding to realistic adverse and stressful events there is little that his physician can do to correct them. If the patient is responding to events with neurotic distortions the non-psychiatric physician is not trained to help the patient to correct or resolve these distortions. What then, can the physician do? He can really accomplish a great deal by doing some rather simple things. He can attempt to make an empatic evaluation of those things that are disturbing the patient. He can attempt a simple understanding of the patient as a person reacting to psychological, social and cultural forces as well as physical and biological forces. A detailed psychiatric and social history

is not necessary nor desirable for this understanding. The physician need only concentrate on the patient's present life situation. If the past has relevance to the present the patient often will point this out himself. It is not necessary for the physician to succeed in a complete understanding of what is disturbing the patient, such as a psychiatrist might do. The mere fact that he is trying is often enough to cause the patient to feel that he is understood. With this comes a subtle shift in mood and attitude. The patient now has an ally. He no longer feels quite so helpless nor does he despair of hope. With this shift in mood and attitude come equally subtle but desirable physiological shifts. The psychophysiological processes which have contributed to the patient's illness have been halted and reversed. The physician now has a relationship with the patient that he can exploit for the patient's own welfare. He can work in a relaxed and understanding way with his patient because now he does not need to defend against inner turmoil triggered by the anxiety or despair of the patient.

A study by Chambers and Reiser on patients with congestive heart failure illustrates the importance of psychological stress in precipitating episodes of decompensation as well as the importance of the physician's understanding of these stresses in the management of such cases(22). They found in a majority of their cases that decompensation occurred in a psychological setting of helplessness and hopelessness following loss of a key figure or rejection by a key figure. Contrary to what might be expected, interviews focusing on this traumatic material had no deleterious effects; rather there seemed to be a beneficial influence on the patients' physiological status. There were some patients with particularly precarious cardiac balances who did not fully respond to medication until after a doctor-patient relationship had been established. These patients maintained compensation only as long as the doctor-patient relationship was satisfactory; but if this relationship was broken, in fact or in fantasy, the patient again developed congestive heart failure.

The deleterious effects of breaking the doctor-patient relationship is often dramatically illustrated in teaching hospitals when the house staff is rotated. Patients who were doing quite well suffer relapses and the O.D.'s are kept quite busy at these times. After the patients adjust to their new doctors they regain the ground lost.

In reviewing the charts of a large number of patients hospitalized with ulcerative colitis I was impressed that when the doctors' and nurses' notes reflected an active acceptance and understanding of the patient and his life situations he tended to improve rapidly and go into remittance. If the charts showed only an academic interest in the patient as an interesting or challenging medical problem his course was chronic and hospitalization prolonged. In two instances in which the patients were obviously not accepted or liked as persons by the ward personnel, the patients had stormy courses and expired in spite of heroic efforts of medical management.

The physician does not need extensive training in psychopathology and psychotherapeutic methods to effect a good therapeutic relationship. Also, he need not extend himself in manner or deed to impress the patient or to get the patient to like him or to idolize him. There are dangers in this. What is needed is a simple relationship built on simple understanding and respect.

CONCLUSION

In summary, psychological stress has been defined in terms of the psychophysiology of anger, anxiety and depression, which are basic ego states of displeasure. The role of the moods and attitudes of helplessness and/or hopelessness in the etiology of disease processes has been discussed. The importance of the doctor-patient relationship in checking and reversing these pathogenic psychophysiological processes has been emphasized. One of the most potent agents in the physicians' armamentarium is the hope that the physician brings to the patient, through his understanding of the patient as an individual who is struggling with stressful life situations.

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THE COST OF MEDICAL CARE

Today's Prices Compared with 20 Years Ago

Domestic Servants	Up 297%
Men's Haircuts	Up 218%
Shoes	Up 169%
Food	Up 151%
Public Transporation	Up 139%
Movies	Up 130%
All Medical Costs	Up 108%
Clothing	Up 106%
Physicians' Fees	Up 90%

Note: "Today" is 1959 and "20 Years Ago" is 1939.

(from AMA's publication, "The Cost of Medical Care")

Topical Methyprednisolone in a Physiological Base—Its use in the Treatment of Dermatoses

George H. Kostant, M.D.

A total of 120 patients with various common skin disorders were treated with a Methylprednisolone cream and a Neomycin-Methylprednisolone cream. (Medrol Acetate, Veriderm and Neomedrol Acetate, Veriderm.) Results were excellent in 68 (57%), good in 45 (37.0%) and poor in only 7 (6.0%). The preparations were well tolerated and cosmetically acceptable.

THIS paper reports my experience with two new topical methylprednisolone preparations in a recently developed base designed to simulate the composition of normal skin lipids. The base is similar to the average composition of human skin lipids (sebum) relative to the following: unsaturated and saturated fatty acids, triglyceryl and other esters of fatty acids, saturated and unsaturated hydrocarbons, free cholesterol, and higher molecular weight alcohols. Futhermore, the infrared spectrum and the acid, saponification, and iodine, numbers are nearly identical to those obtained with natural human sebum.[1]

MATERIALS AND METHODS

One hundred thirty-six patients with various dermatoses participated in the study. However, 16 did not return for follow-up examination. The 120 completing the study ranged in age from 4 months to 70 years. Forty-eight were treated with methylprednisolone 0.25% in the special cream base and 72 were treated with neomycin 0.5%-methylprednisolone 0.25% in the same cream base. Each patient was instructed to apply the prescribed cream to the affected area twice daily.

Of the patients treated with the methylprednisolone cream, 12 had concomitant therapy – 5 received oral or parenteral corticosteroids, 4 received radiotherapy, 2 received antihistamines, and 1 received a tranquilizer. Of the patients treated with the neomycin-methylprednisolone cream, 9 had concomitant therapy – 6 received oral or parenteral corticosteroids, 2 received radiotherapy, and 1 received antibiotics.

Duration of treatment depended largely on the particular dermatosis involved and ranged from 2 days to 7 weeks.

Results were graded as follows:
excellent – 50-100% improved
good – 25-50% improved
poor – evidencing less than 25% improvement, necessitating a change in topical therapy.

RESULTS

The results are summarized in Tables One and Two. Of the 48 patients receiving methylprednisolone cream, 60% had an excellent response and 38% a good response; of the 72 cases treated with neomycin-methylprednisolone, 54% had an excellent response and 38% a good response. Only 6% of patients treated with both creams responded poorly. Forty-four patients achieved excellent results with these creams within a period of one week.

One case deserves special comment. A 55-year-

Medications supplied as Medrol Acetate, Veriderm® and Neo-Medrol Acetate, Veriderm® by The Upjohn Company, Kalamazoo, Michigan.

TABLE ONE

Results of Treatment of Dermatoses with Methylprednisolone 0.25% in a Cream Base Approximating the Composition of Skin Lipids

Diagnosis	No. Pts.	RESULTS Excellent	Good	Poor
Ano-genital pruritus	4	2	2	
Atopic dermatitis	8	5	3	
Contact dermatitis	27	18	8	1
Eczema, autogenous	1	1		
Neurodermatitis	5	3	2	
Nummular eczema	1			
Psoriasis, pustular	1		1	
Seborrheic dermatitis	1		1	
TOTALS	48	29	18	1

TABLE TWO

Results of Treatment of Dermatoses with Neomycin 0.5% and Methylprednisolone 0.25% in a Cream base Approximating the Composition of Skin Lipids

Diagnosis	No. Pts.	RESULTS Good	Excellent	Poor
Acne vulgaris	3	2	1	
Actinic skin	1		1	
Ano-genital pruritus	1		1	
Atopic dermatitis	4	2	2	
Contact dermatitis	20	11	9	
Dyshidrotic eczema	1		1	
Herpes simplex	2	2		
Insect bites	2	2		
Intertrigo	1			1
Neurodermatitis	3	1	2	
Neurotic excoriations	1		1	
Nummular eczema	8	7		1
Perleche	1	1		
Psoriasis	3		1	2
Pustular bacterid	2		2	
Seborrheic dermatitis	17	9	6	2
TOTALS	72	39	27	6

old woman with pruritus vulvae of thirty years duration had complete relief of her pruritus within one week of beginning treatment with methylprednisolone cream.

Side Effects: Two patients complained of burning sensations. One was a patient with contact dermatitis who was treated with methylprednisolone cream. The other was a patient with seborrheic dermatitis who was treated with neomycin-methylprednisolone. The latter patient experienced no burning when methylprednisolone cream was substituted. Neither patient showed objective evidence of sensitivity. There were no instances of primary irritation or allergic hypersensitivity.

COMMENTS

Both creams were especially well tolerated and cosmetically acceptable, a fact which I attribute to the special cream base appoximating normal skin lipids. The base being less greasy than most ointment bases, these preparations were particularly effective in hairy areas – the scalp, the axillae, and the pubic regions. The neomycin-methylprednisolone cream was found to be especially valuable in the management of acne vulgaris which had been overtreated with drying agents. In dry eczematous dermatoses the creams were observed to be less drying than most lotions.

SUMMARY

One hundred twenty patients with dermatoses amenable to topical steroid therapy were treated with either methylprednisolone or neomycin-methylprednisolone in a special cream base approximating that of normal skin lipids. Ninety-four per cent of the patients manifested good to excellent results.

There were no instances of allergic hypersensitivity or primary irritation.

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The Community Emergency Health Program

George Moore, M.D., M.P.H.

Charlottesville, Virginia

There is no question that America will survive a total war if only we begin now to accept the challenge, a challenge which must be centered on keeping our nation strong internally as well as externally. Time could be running out and I pray sincerely that our nation has not procrastinated too long already.

What will you do to help America?

184 YEARS ago tomorrow, an American school teacher was hanged by his neck until dead. A school teacher turned soldier in the defense of his nation, this man regretted that he had only one life to give to his country. In recent history another American in a similar situation seemed to regret that he had only one country to give for his life. Have times changed? Are we as a nation in serious danger? Is the average American losing his sense of challenge and becoming a self-centered amoeba-like creature drifting in a tide of material plenty without regard for either past or future? It seems to be the whole man who is in danger today. We have been freeing ourselves from drudgery but stand now in mortal danger of enslaving ourselves to a frenzied modernism that can sap our vigor and undermine our sense of challenge.(1)

This lack of challenge seems to be reflected in the attitude many Americans manifest in Civil Defense today. Perhaps the most valuable criterion with which to evaluate our current status of preparedness is the community Civil Defense program, for it is at community level that we must establish our front line of defense. It is here that the injured will be cared for, hospitals expanded ten fold, if necessary, emergency facilities improvised, supplies expended and health manpower utilized. It is here that ignorance or knowledge concerning radioactive2 fallout will affect life, death, or chronic disability for millions. The community is not only the first line of defense but it is an integral unit of survival, recovery, rehabilitation and eventual victory. In the immediate chaos following attack each community must emerge as an island of survival and expand rapidly for the re-establishment of communications, transportation, and resources in order to lend assistance to other communities. Such communities will coalesce to reinstate county lines, then State boundaries, and finally the sum total of all units, our Nation. As Office of Civil and Defense Mobilization Director Leo A. Hoegh has said, "Civil Defense is everyone's business." We must never forget that all of us are a part

•Presented at the Ninth U. S. Civil Defense Council Conference, Minneapolis, September 21, 1960.

••General Health Services Consultant, DHEW, Region III, Charlottesville, Virginia.

of government.

Let us speculate for a moment on what might happen to a community which has neglected Civil Defense preparation. It is no doubt true that most non-target area towns in such a predicament would survive a thermonuclear war. Following the initial shock, survivors would begin to mobilize for the disaster and in typical early American fashion would bend their wills and strengths together to recover and help others. Private physicians would work around the clock without thought of recompense and public health workers would struggle against overwhelming problems of communicable disease, food and water pollution and lack of sanitation. Bandages and dressings will be used over and over again until they disintegrate. Surgical drainage will replace antibiotics and the dead would be interred in trench graves. The community would eventually recover as it has recovered from other disasters, large and small. Thus, in a sense we might say that we are prepared now considering the sum total of our basic resources, strengths and latent abilities but there is a factor, a very vital factor, that may cost us our freedom. This is time! The war is yet to be won and after our military forces have given their initial retaliatory effort, what then? Obviously the Nation which recovers first from attack should win. Without Civil Defense preparedness, national recovery sufficient to enable this Nation to support a continued military defense will require time, perhaps months and longer. An adequate national defense in the 1960's necessitates the immediate mobilization of industry, manpower, resources, transportation, communications, and a renewal of the will to live. The time required for effective recovery, therefore, is inversely related to the amount of effective Civil Defense preparation. The more Civil Defense preparation – the faster will be our recovery and the more certain we are of victory. Our basic challenge becomes quite simply a revival of the pioneer American spirit before it is too late.

What are the major problems of a community level Civil Defense health preparedness program and how can we meet them? The difficulties of community level health preparedness for Civil Defense are little different from those of community level public health. Many factors responsible for poor or non-existent local health services are also answerable for a lack of Civil Defense preparation. In the same way that we need to awaken the public to the need for national security we need a rebirth of the evangelical spirit of public health. The ideas that drew us into the field of public service need to be rekindled and brought up again to a bright flame. This is something other people can learn to understand and with that understanding will come respect, acceptance, and support.(1) It is suggested that Civil Defense and Public Health should work together one for the other. The challenge of saving our democracy may serve to strength local health service and in turn the strengthening of medicine and public health becomes preparedness for disaster. Both public health and Civil Defense cut across the broad baseline of total community services and are affixed to a better and stronger America.

It is primarily for this reason that the Office of Civil and Defense Mobilization through the Executive Office of the President has delegated responsibilities in Civil Defense to other federal agencies. The Public Health Service, for example, now has been assigned full responsibilities in emergency health and medical services at the Federal level. This "built-in" concept is in congruity with the Civil Defense philosophy of the Federal Government. It insures Civil Defense as a natural function tied in with ongoing and day-by-day activities. In the future, a municipality requesting federal funds for a water purification plant should consider the protection of its water against radioactive fallout and chemical pollution. Hill-Burton funds for construction of hospitals and other health facilities may allow for special protective construction for patients and staff. Training for radiological health officers will include the problems of widespread radioactive contamination. Our Public Health Service Epidemiological Intelligence System will be tied in with defense against biological agents and laboratories readied accordingly. The Public Health Service is developing these concepts rapidly and through the Division of Health Mobilization, the "built-in" program is demanding special and immediate attention.

In fiscal year 1960, our Public Health Service Region III Office at Charlottesville, Virginia, was privileged to study and lead a "Pilot Program" among the States of Virginia, West Virginia, Maryland, Kentucky, and the District of Columbia. Through our program staff we were able to study ways and means of developing the "built-in" concept at community level. The goal of our regional program was the implementation of state and local operational survival plans.

The first problem of interest which has thwarted effective implementation of state and local plans is lack of funds. Funds are required for research and training and for payment to those who might seek training and employment if the rewards were greater. Full-time health personnel are needed at community level to act in the role of coordinators. Someone must weave together the complicated threads of Public Health and Emergency Health Services. Usually this is the responsibility of the local health officer but success is most apparent when a full-time qualified person is available to assist the local or district health officer. This person must be well versed in weapons effects, public health, medical care, hospital administration, training, supply, communications, community problems, persuasion and diplomacy. He must be able to relate Civil Defense concepts to on-going programs and offer substantive aid to busy public health workers and physicians.

To an extent, Region III has developed an approach to this problem. We have assigned full-time public health representatives to each State health officer for health mobilization purposes and recruited or activated up to 50 part-time commissioned officers of the Public Health Service Inactive Reserve to support community programs locally. These men and women represent private medicine primarily and give support to their local health departments on a cooperative basis. Later, a few hundred more reserve officers are to be given disaster assignments and training and will serve on a voluntary basis for health mobilization.

Public Law 85-606 was enacted recently and some federal money is now available to the states on a matching funds basis for personnel and administrative expenses in Civil Defense programs. This bill tends to strengthen local and state Civil Defense agencies through the employment of full-time personnel.

The second problem is lack of public understanding. Universal acceptance for Civil Defense must be sought among physicians, nurses, allied medical personnel and public health officials. We have found that the health and medical professions are not really apathetic to health mobilization. They are vitally interested but endowed with normal human attributes and emotions. The words "Civil Defense" sometimes evoke an unpleasant psychological reaction since Civil Defense implies preparation for war. There are more pleasant things to discuss and for a few an attitude arises that the less we think about the war, the less likely it will be. Professional interest is usually latent but given a personal approach, understanding leadership, and some token of support from their Civil Defense agency, the physicians and allied medical personnel of America will respond to a national appeal for assistance. The ills of mankind surely are not far removed from the ills of patients.

The enthusiasm and support of our medical and health professions not only should be inspired but be maintained. Full-time health mobilization coordinators must continuously provide new ideas, technical information and essential personal contact. We should be able to persuade the public to accept a total health and medical program which will not be wasted even without war. Everything we do in health mobilization has a purpose and that purpose is to provide better health and a stronger nation. It must also be recognized that preparation against a major catastrophe is also preparation for a minor disaster simply by degree. And, for the sake of peace, a sound balance of Military and Civil Defense represents our best hope. If we are strong enough to withstand a massive attack without being irreparably injured, then any aggressive power will be discouraged in initiating a war. Certainly, if we can not be conquered, then there is no reason for war.

In Charlottesville, we have considered these and other psychological problems and utilized our regional health educators, mental health

people, nurses, public information and training officers accordingly. Each new step in the program has deserved minute inspection in order to insure the right approach. Our health information officer was recruited principally to assist the part-time reserve officers in the field and provide continual personal contact for community level problems.

The third problem follows quite closely. There is a lack of knowledge and policy for what is perhaps the most complex program ever to face our medical and public health professions. This is much the same challenge which faces our public health programs today. Research is needed into the intricacies of community health services. How can public health best serve the needs of the public and gain enough support to meet new and ever-changing demands? How can public health serve private medicine and effect a total approach to community health problems involving the whole family? The "built-in" approach to health mobilization is not simple. It requires much study and will be accepted by medical and health officials alike when proof is evolved that health mobilization is everyone's responsibility and not disassociated from everyday problems. Our daily trials are in no way different from major disasters except in magnitude. In war all of us will be forced to drop our on-going activities in a concerted effort toward survival and recovery. If we have laid a mutual foundation of strength this transition will be rapid and easy.

Our regional staff have begun to lay the groundwork for a successful "built-in" program. Health Mobilization personnel have intermixed with other office members and learned the enigmas of on-going programs, the hopes, disappointments and the successes. Conferences, work-shops and meetings offer a thorough understanding of what our people could do to strengthen fundamental programs and yet prepare for a major disaster. Only when our Health Mobilization staff and others agreed on a single program of action were we satisfied that we had attained a true "built-in" program. Thus, with training, personnel in "peace-time" programs become the principal agents of health mobilization. They can work with their counterparts in the State Departments of Health and, in turn, the state people will assist local health departments.

One of the important conclusions of our study is an attentive regard for the mutual aid area concept. We consider this concept to be an instrument for the implementation of state operational survival plans as, for example, it has been in the States of Minnesota and Wisconsin. Most state plans call for a partitioning of the state into Civil Defense areas or regions for purposes of administrative control. A state may have five or six Civil Defense areas each representing one or more office of Civil and Defense Hobilization-designated target cities and their nearby support counties. It has been extremely difficult in the past to bring together the large cities and their support counties due to political difficulties and misunderstandings. Yet, get together they must, for in time of attack the target city populace must evacuate either immediately or later as fallout permits, to the support areas. Since the target city is lost for all obvious purposes, public services must be related to support county facilities. Rural counties, however, can not care for thousands of evacuees without outside assistance and must depend on target city health and medical personnel for support. Many 200 bed emergency hospitals have been prepositioned in support counties for target city personnel already but most large cities today have not prepared for utilization of these emergency units. Adequate pre-attack preparation in health mobilization for a target city requires that the medical and health professions from the entire area collaborate in a mutual aid program.

The approach has been to encourage the state health officers to organize civil defense area health and medical advisory committees consisting of public health and medical society officials from each county. Only when a group of counties confronted with the same problem can plan together with the target city and understand the sum total of needs and resources will they really be able to develop a workable program for mutual aid assistance. The success of Minneapolis and St. Paul in providing an efficient mutual aid program not only with their support counties but with the State of Wisconsin speaks for itself.

In 1952 I was detailed by the Public Health Service to the Asian Kingdom of Nepal to help institute a public health program. After completing a survey of the country's problems and developing a plan of operations in cooperation with the Nepalese Government, the first problem of implementation was overcoming the lack of health manpower. In the entire country of Nepal, with an estimated population of nine million, there were only nine qualified physicians. Where were we to turn? An obvious answer was to recruit good citizens, community leaders, and train them as health specialists. In this primitive nation where people were living even without the benefit of the wheel, I shall never forget the response of the public to our plea for able volunteers. Hundreds of ex-Ghurka soldiers living on pensions and who had fought under British and Indian flags across the world emerged from their stone huts and applied for training. Old soldiers who had seen the outside world and realized the poverty of their own nation would stand before us, salute and say, "Sahib, we have come to serve. Show us how we can make our country better."

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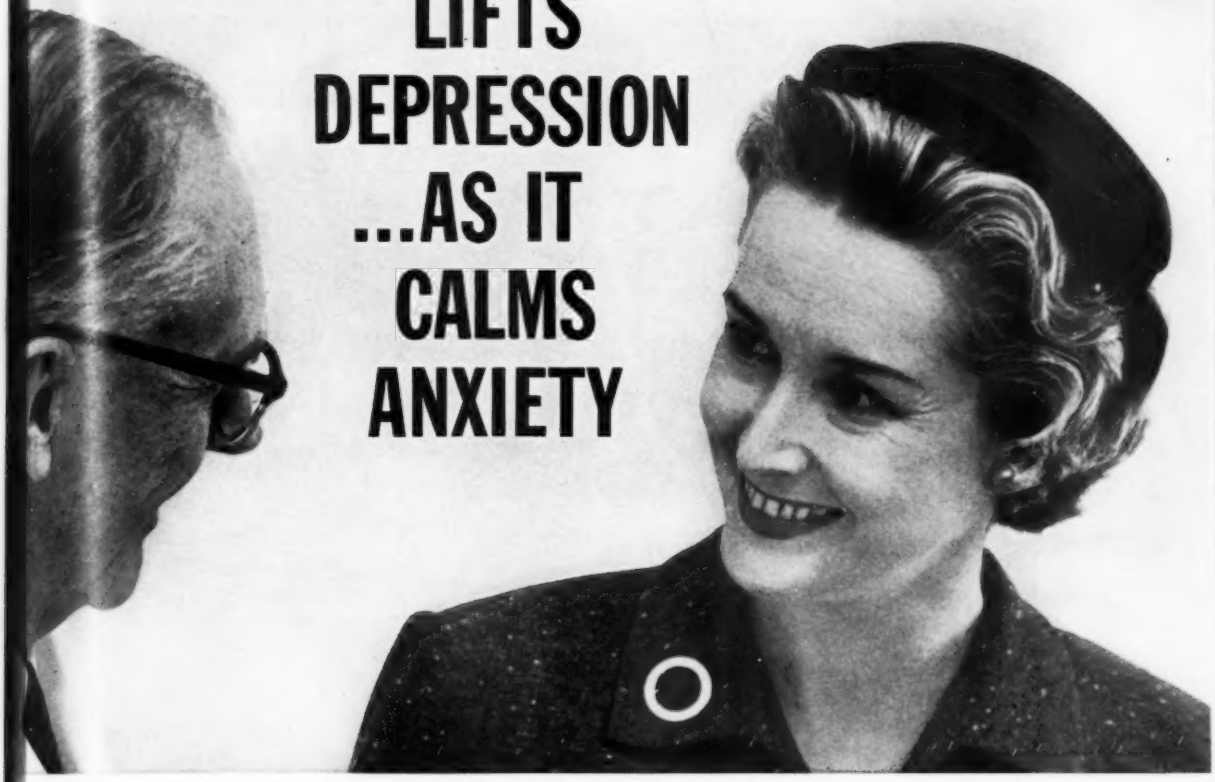
LIFTS DEPRESSION ...AS IT CALMS ANXIETY



"I feel like my old self again!" Thanks to your balanced Deprol therapy, her depression has lifted and her mood has brightened up – while her anxiety and tension have been calmed down. She sleeps better, eats better, and normal drive and interest have replaced her emotional fatigue.

Brightens up the mood, brings down tension

Deprol's balanced action avoids "seesaw" effects of energizers and amphetamines. While energizers and amphetamines may stimulate the patient – *they often aggravate anxiety and tension.*

And although amphetamine-barbiturate combinations may counteract excessive stimulation – *they often deepen depression and emotional fatigue.*

These "seesaw" effects are avoided with Deprol. It lifts depression as it calms anxiety – a balanced action that brightens up the mood, brings down tension, and relieves insomnia, anorexia and emotional fatigue.

Acts rapidly – you see improvement in a few days. Unlike the delayed action of most other antidepressant drugs, which may take two to six weeks to bring results, Deprol relieves the patient quickly – *often within a few days.* Thus, the expense to the patient of long-term drug therapy can be avoided.

Acts safely – no danger of liver or blood damage. Deprol does not cause liver toxicity, anemia, hypotension, psychotic reactions or changes in sexual function – frequently reported with other drugs.

▲Deprol▲®

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this may be gradually increased up to 3 tablets q.i.d.
Composition: 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.
Supplied: Bottles of 50 light-pink, scored tablets. Write for literature and samples.

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The President's Page

The Crucial Role of Medicine in these Times

INAUGURAL ADDRESS

Leslie B. Smith, M.D., President

The Arizona Medical Association, Inc.

Leslie B. Smith, M.D.

A year ago Doctor Melick drew for us a word picture of the man who was to succeed him as President, Doctor Lindsay E. Beaton. He portrayed a man of stature – a man with an exceptional academic background – a man of character, devotion and dedication with the graces of culture. Doctor Melick predicted that Doctor Beaton would serve us well. I have been privileged to spend many hours at his side in the conduct of the affairs of the Association which have verified Doctor Melick's prediction. He has been wholly unselfish – having spent weeks away from home, his family and his practice without financial reimbursement. He has spent many untold hours at home, while the wee hours of the morning slipped by, in study and deliberation.

Doctor Beaton's pattern and quality of performance is nothing short of frightening to me. To try and itemize his unique personal contributions to this organization would require the remainder of this hour.

I have never approached an assignment (President, Arizona Medical Association) with more diffidence and fear, because of my knowledge of the significance and vastness of the duties of this office. As President of the Arizona Medical Association, I realize that my every act and utterance will be critically scrutinized. What I say or do, or do not say or do, will reflect upon each of our over 1,000 members, and will also be significant to the stature of the entire medical profession and its 250 thousand physicians.

Reminiscing is frequently a sign of aging – a characteristic of those past maturity – you younger members of our medical association may be inclined to find it such. However, those of you who have attained my 55 years of age will readily deny that to reminisce is a sign of senility which precludes a vision of the future, because we cannot accurately judge the present or plan for the future without a review of the past.

My first official contact with the Arizona Medical Association was 24 years ago, as a delegate from Maricopa County. In those days, as was the custom, delegates were "elected" by appointment from those who were going to the State Meeting. I held up my hand and was duly elected, having been in Arizona less than one year.

Three of us newcomers invaded Yuma in 1937 for our first visit to that now bustling

city. The House of Delegates was scheduled to convene at 9:00 A.M. We, who traveled together, were 3 minutes late. As we ascended the stairs to the meeting room, a doctor inquired of us as to where we were going – we stated with due dignity befitting our esteemed position as delegates – that we were delegates from Maricopa County on our way to the House of Delegates. This friendly physician quickly informed us that the meeting was already over – hence our mission was concluded. He further stated that, "We have already taken care of everything." I have been perplexed for 24 years, wondering who were the "we" referred to, and what things they had taken care of in 3 minutes. This was my introduction to the business side of the Association – but times have changed.

The membership of the Arizona Medical Association has grown from 268 to 1,112 during my membership time of 25 years, and its office staff has increased from 1 to 8. The business of this Society has grown from a few items handled quickly, as I mentioned, in 3 minutes at the Yuma Meeting, to where recently in a single meeting of your Executive Committee, 90 separate items were on the agenda – which required 11 hours to process – also the same group spent 6 hours the next day in deliberation on Society activities with the Board of Directors. Your Board of Directors discussed approximately 300 items in their 5 sessions during the past year. I must emphasize that all these deliberations and the resulting actions were positive and not negative.

Medicine has too frequently and unjustly been accused of being negative with no positive program. Anyone who would even casually review the activities of this relatively small State Society would be irrevocably impressed with the fact that Medicine – organized and individually – is positive and not negative in its programing. Medicine always has been, and will continue to be, the bulwark for the promotion of the science and art of medicine and the betterment of the public health for the benefit of all people.

Our adversaries, who nurture socialization, have been largely responsible for the creation of the "negative image" of the doctors, because it is politically expedient to augment their power. Remember that duplicity is their most frequently employed procedure. Whether anyone is positive or negative is wholly dependent upon the phrasing of the issue. Sin is condoned by some; hence, to be against sin in this instance, would be a negative stand. It certainly is not negative to be positively against the destruction of that which has proven to be paramount in the achievement of the best medical care. There is no substitute for the best.

The members of the Arizona Medical Association, besides being part of the second most rapidly growing state in the Union, have also had to react to the threatened changes in the basic principles of our entire social-economic-political existence. We are a part of an ideological war.

A few years back we, as practitioners of medicine, devoted our time primarily to the basic medical, scientific and philosophic tenets with little diversion by any threat of destruction or alteration in our basic freedoms.

As a Nation, we have faced and successfully subdued threats to our existence in the past. We had a Civil War between the States; World War I, which subdued the imperialistic ambition of Kaiser Wilhelm; then came World War II, when it was necessary to sacrifice the lives of many Americans to save the world from the dictatorial psychotic lust for power precipitated by Hitler. This took many of us away from our homes and our patients, I was gone for 5 years. These assaults on the freedom of men were, for their times, formidable; however, they were mere "brush-skirmishes" as compared to the present threat to our continued existence as a free Society by an ideology which would make us slaves by centralized regulation.

Today, we are faced with an ideologic force which proposes to reach its goal of human subjugation – not in one generation or lifetime but in several – by insidious infiltration. The present danger was initiated by Karl Marx – implemented to power by the paretic Lenin and those who have followed him. They have ruthlessly foistered their regimentation upon almost one billion of the peoples of this earth. Their doctrine destroys human incentives and productivity by substituting a promise of Utopia, with its bountiful existence without individual effort. It proposes a Classless Society, but fails to acknowledge that such is impossible until all people are born more similar than identical twins. This is the threat that comes from beyond our boundaries.

There is a second assault upon our existence as free people and this is from within our boundaries — by those who are forcing socialistic doctrines upon the unsuspecting complacent populace. The best authority for this could be none other than Khrushchev, who has stated — "Your Country (U.S.A.) is becoming so socialistic that in 15 years there no longer will be a basis of conflict between our two countries." Thus we are threatened from beyond, but more important is the evil from within.

Why have I injected this so-called "non-medical political material?" My answer is simply that it is not non-medical in its broad aspect. All things which affect human behavior have an impact upon each individual's mental and physical health. It is axiomatic that the health of the people cannot be separated from their social, economic, emotional and political existence. Therefore, whenever government threatens to modify the welfare of the people, we, as guardians of their health, must be actively concerned. The health of our people is our prime objective.

Medicine has been caught in this conflict of political ideology — freedom, which is essential for health and happiness, versus slavery to government with all its ills of undue stress.

The changes in our government during the last 30 years, with its tentacles reaching out for centralized bureaucratic control of the every facet of our lives, unmistakably points toward the completion of socialization. The direction of travel of the socializers is now clearly evident. It can no longer be said that a little more socialization will not hurt or noticeably affect us. A little more, plus a little more, plus a little more finally add up to equal the total. The "straw" to break the camel's back has now been selected — the socialization of medicine. If this is added to the already sagging back of the camel, it will be permanently broken and all will be lost.

The Anderson-King Bill, HR 4222, the successor to the Murray-Wagner-Dingle and the Forand Bill, and the Administration's program alleged to be for the care of the aged, have been admitted by the Socailist Party, Forand and some spokesmen for labor and others as the major necessary legislation for their goal of the total health care administered by the Government. We must call it socialism because the Socialist Party has so recognized it and I quote, "It's begging the question to attack such an approach to our medical needs on the grounds that it is 'socialistic' as indeed it is — we can do everything to encourage federal intervention on bit-by-bit basis — once the Bill is passed, this nation will be provided with a mechanism for socialized medicine."

"Traditionally, one of the easiest first steps in imposing statism on a people has been government paid medicine. It is the easiest to present as a humanitarian project" (Ronald Reagan) because no one wants to be known as opposing care for the sick whether they need additional care or not.

Lenin stated that the socialization of medicine is the keystone to the arch of the Socialistic State.

Senator Robert S. Kerr, Democrat, Oklahoma, recently outlined the social-political obligations of the medical profession. His was a sober and challenging speech which outlined our duties, not only as doctors, but also as political citizens. He bluntly stated, "You doctors can keep out of politics, but you cannot keep politics out of your business." In reference to our ability to help stop the onrush of socialism by the socialization of medicine through the present proposed legislation, Senator Kerr challenged, "If you (medics) fight the battle and win it — and win it you must — because all the peoples of the world need you to do so — such an accomplishment will surely be equal to all your scientific achievements. Your cause is right. None of us or the other citizens will be free by a program in Washington — the Anderson-King Bill is such a program."

We in medicine have become too browbeaten by some political planners and their ability to control some segments of the press, which espouses to express public opinion. With dignified naivete, complacency and timidity, we have, to some extent, forgotten and ignored our potential as our "brother's keepers." We dare not further forsake our obligated professional purposes or our duties as citizens.

There were five doctors who invested their time and thoughts in formulating the Declaration of Independence and risked their lives by attaching their signatures to this document. With unselfish sacrifice, they gave of themselves so that the generations to follow would enjoy free-

dom. Can you or I do less?

In this young growing state we have many young members. We are proud of you younger members and invite your greater participation in your Society activities. You, as well as all of us, are charged, not only with the destinies of our chosen profession, but also, knowingly or unknowingly, with the responsibility of helping protect the future social freedoms of all. Our patients look to us, their doctors, not only as ministers of their health, but also as educated leaders, from whom they seek and expect advice relative to all things which affect their total being. This is their image of the beloved "country-doctor."

How shall w meet our challenge? First, we must continue to promote and render the best medical care with considered devotion. Secondly, we cannot longer procrastinate with tangential issues.

Do you stop long enough from your busy practice to meditate about things other than pure scientific medical subjects? Have you recently reviewed your experiences of the past to determine those things which have been responsible for success and happiness? Have you duly contrasted your way of life and all those about you with the plight of those who live under other forms of government? Have you conscientiously charted your role to fulfill your obligations to the future society? Are you guilty of a myopia in which you cannot see into the future?

Some of you may be somewhat surprised to learn that there is reason for optimism and that there is no justification for an attitude of defeatism or acquiescence. The political structure of this country is still such that we can prevent the addition of the last straw — socialized medicine. This has been determined by political analysts to be a fact. Non-medical students of politics are telling us that the torches of liberty and freedom are inherently in the hands of the medical profession. They say that we must win the fight to prevent the enactment of Forand type of legislation, because it is truly Socialized Medicine — which is the major remaining hurdle before the completion of the Socailized State. Because of this, our crucial role, we are the ones upon whom the attack has been centered.

We must be fully aware that the critical attack on medicine, and its doctors, is political and not moral.

Political analysts have assured us that we can win if we will take a little time now to, first be informed ourselves, and second, to pass these truths on to the over two million patients whom we see each day and to all others. We must also inform our representatives in government as to our views and encourage others to do likewise. As Senator Robert Kerr recently challenged, "unless you do this, be prepared to suffer the consequences."

It requires only a little reading and study to acquire the proper knowledge. Your AMA News is an excellent reference. Doctor Edward R. Annis — one of our greatest benefactors — recently related that after one of his presentations a friend asked — where do you get all the facts, figures and material that you use? He told his friend that on that occasion almost all of his knowledge had been obtained from the last two issues of the AMA News in 40 minutes time. Your AMA has also prepared kits, many pamphlets and other publications which are available.

Your AMA, which is you, is now launching a Herculean effort to win this battle which will determine whether our Republican form of government shall previal or be replaced by a Socialistic ideology. You will be further briefed on our strategy. Your AMA has awakened with resolute determination, proper perspective and professional know-how. We must awaken and join the fight if we are to survive. You will be agreeably surprised at the magnitude and quality of our program.

We must brighten our light so that all may see and lift our voices so that all may hear and learn the truth. The light of truth shall prevail, but only if it is seen and not if we continue to allow it to be covered by our opponent's baskets of deceit.

A psychiatrist once told me that doctors are best classified as "Mothers" — if this be correct, then let us recall that from time immemorial, Mothers have not been warriors but as Mothers, they will belately make the last ditch stand and vehemently protect their charges. We are now approaching the "point of no return" and true to our tradition, we will assume our character with its determined "do or die" fight, not for selfish gain, but for the benefit of all mankind.

In summarizing – we have been assured that we can win. The political composition of Congress is favorable. The amount of time left is sufficient to allow proper action. However, all this optimism is predicated upon our becoming duly informed with the truth and communicating with the people and our legislators.

If we love medicine and respect the welfare of our patients, we will accept our work load. This is not an assignment merely for tomorrow and the next day – our efforts will have to be extended over many years to come. The preservation of freedom will require eternal vigilance.

A Virginia coal miner is credited with having said – "When little men cast long shadows – the evening sun is about to set." – paraphrasing, "when insincere politicians cast long shadows, the bright sun of liberty is about to go down."

If we join together, my diffidence and fear can be transposed to noble achievements and the advancement of health care for all. We must keep our ranks closed if we are to succeed in dispersing the pall of political envelopment.

I pray that you will all help and that God will guide us in the fulfillment of our obligations.

Gentlemen, let us proceed.


unsurpassed "general-purpose" steroid outstanding for "special-purpose" therapy
Aristocort®

in allergic and inflammatory dermatoses

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UNSURPASSED "GENERAL-PURPOSE" STEROID OUTSTANDING FOR "SPECIAL-PURPOSE" THERAPY

ARISTOCORT Triamcinolone has long since proved its *unsurpassed efficacy and relative safety* in inflammatory and allergic dermatoses.

But ARISTOCORT has also opened up new areas of therapy for selected patients who could otherwise not be given corticosteroids.

for example:

SPECIAL PROBLEM: EDEMA DUE TO SODIUM AND WATER RETENTION

In patients with edema induced by the earlier corticosteroids or from other causes, diuresis and sodium loss often occurs with triamcinolone. (Fernandez-Herlihy, L.: *M. Clin. North America* 44:509 [Mar.] 1960.)

SPECIAL PROBLEM: APPETITE STIMULATION AND WEIGHT GAIN

In contrast to the heightened craving for food sometimes seen with other corticosteroid compounds, appetite was unaffected by triamcinolone. (Cahn, M. M., and Levy, E. J.: *Am. Pract. & Digest Treat.* 10:993 [June] 1959.)

SPECIAL PROBLEM: HYPERTENSION

When ARISTOCORT was given to patients with dermatologic disorders for long periods, there were no significant changes in blood pressure. (Kanof, N. B.; Blau, S.; Fleischmajer, R., and Meister, B.: *A.M.A. Arch. Dermat.* 79:631 [June] 1959.)

SPECIAL PROBLEM: PSYCHIC STIMULATION AND INSOMNIA

Ideally, corticosteroid therapy ought not to add to the psychic component in dermatologic disorders, nor induce insomnia which will intensify the patient's itching and irritation. ARISTOCORT Triamcinolone has been singled out for its remarkably low incidence of psychic irritation and insomnia. (McGavack, T. H.: *Nebraska M. J.* 44:377 [Aug.] 1959; Freyberg, R. H.; Berntsen, C. A., Jr., and Hellman, L.: *Arthritis & Rheumatism* 1:215 [June] 1958.)

SPECIAL PROBLEM: SEVERE CARDIAC DISEASE

Elderly patients with pulmonary emphysema due to impending heart failure who required corticosteroid therapy showed that triamcinolone could be employed with benefit and relative safety. (McGavack, T. H.; Kao, K. Y. T.; Leake, D. A.; Bauer, H. G., and Berger, H. E.: *Am. J. M. Sc.* 236:720 [Dec.] 1958.)

Precautions: Collateral hormonal effects generally associated with corticosteroids may be induced. These include Cushingoid manifestations and muscle weakness. However, sodium and potassium retention, edema, weight gain, psychic aberration and hypertension are exceedingly rare. In the treatment of allergic and inflammatory dermatoses, dosage should be individualized and kept at the lowest level needed to control symptoms. Dosage should not exceed 36 mg. daily without potassium supplementation. Drug should not be withdrawn abruptly. Contraindicated in herpes simplex and chicken pox.

Supplied: Scored tablets—1 mg. (yellow); 2 mg. (pink); 4 mg. (white); 16 mg. (white). Also available—syrup, parenteral and various topical forms.

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Request complete information on indications, dosage, precautions and contraindications from your Lederle representative or write to Medical Advisory Department.

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

Editorials

American Medical Association Television Program?

An A.M.A. circular under the heading "A.M.A. Launches New Campaign to Help Public Cut Health Care Cost" states that the purpose of the new Commission on Medical Care Costs, under whose aegis this campaign is being launched, is "to find answers to the many questions being raised about medical care costs and to present the findings frankly and fourthrightly to the medical profession and to the public."

It is not stated in this news release how these findings are to be presented to the public. It is to be hoped that the campaign is not going to be handled by pamphlets to be placed in doctors' offices. This would probably be the most useless way of spending A.M.A. funds. Is it not about time that the A.M.A. start using the medium best suited to public education in our era, the medium of education most neglected

ARIZONA MEDICINE

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CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules should be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English or Spanish, especially with regard to construction, diction, spelling and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Exclusive Publication — Articles are accept for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
7. Reprints will be supplied to the author at printing cost.

Editorials of **Arizona Medicine** are the opinions of the authors and do not necessarily represent the official stand of The Arizona Medical Association. The opinions of the Board of Directors may be sought in the published proceedings of that body.

— television? Why cannot a television program be dedicated to such important aspects of medical care as: "What to look for in a Health and Accident Insurance Policy;" "What are the Blue Shield and Blue Cross organizations;" "Why you should buy Health and Accident Insurance;" "What you should know about Drugs and Medicines;" "How to choose a doctor;" "What do we mean by free choice of doctor;" "What do we mean by doctor-patient relationship;" "What does the A.M.A. do about doctors who abuse their profession;" "How does the average M.D. live;" etc., etc., etc.

How will we finance such an ambitious program? Well, if a program like this is conducted on a high level of taste and in a cultured way, what good reason could be used for not accepting an ethical sponsor. Why should not ethical drug companies be allowed to sponsor such a program. With tact, vision and truth of purpose, such a program can give a rebirth of the public image of the medical profession. But it will need to come from those sections of our upper echelons who have progressive vision and not from our "cut-off-your-nose-to-spite-your-face" echelons.

I would predict that such a program as envisioned here will capture the imagination of the public, and would recruit new and enthusiastic material for our medical schools. People would rather see such a program, sponsored by ethical companies, than see little girls on television commercials advertise the benefits of deodorants or little boys advertising the wonders of mild cathartics. The public may have a distorted image of the M.D. But certainly many television sponsors either have a debased image of its viewing public, or the public image of itself needs to be refurbished. Our profession can play a leading role in a general rebirth of taste, values and national purpose.

André J. Bruwer, M.D.

EDITOR'S NOTES

It is desirable that we establish a routine, customary and accepted policy for the disposal of clinical records kept in a doctor's office. This is of primary concern at the time of death of a doctor. However, there should be an accepted time interval for maintaining all medical records, X-rays included.

How should these records be made available to another doctor? Should there be a central clearing house, such as the office of the respective county medical society?

The haphazard course now followed could be standardized. A customary practice would be more acceptable for patients, insurance companies, and at times the legal profession.

• • •

There have been unjustified demands in prescribing Class A narcotics over the telephone by some physicians . . . unjustifiable and illegal demands upon the pharmacist. Those instances which are occurring are inexcusable. This procedure must be discontinued.

• • •

From the comments of the Treasurer at the recent State Meeting of ARMA, it might be interpreted that the journal is a financial drain upon the Society. The auditor's report shows that for the first time this publication has become a self-sustaining unit . . . we hope simultaneously an improved one, in spite of the dire predictions of our former publisher, who must remain unnamed.

• • •

Arkansas, South Dakota and Tennessee permit the corporate form of practice for professional men. Kentucky, Georgia, Indiana, Iowa, Minnesota and New York have bills pending that would permit professional men to incorporate. In view of the tax advantages involved, it is desirable that this be investigated for Arizona.

• • •

The Kerr-Mills Medical Aid Bill has now been an established law for one year. The AMA and ARMA supported this legislation vigorously. But few steps have been taken in Arizona to expedite this Law and its accompanying advantages for the elderly who cannot afford to pay for their medical care. This delay can only play into the hands of the proponents of the Forand-type bill. Action by our legislative committee and our legislature is indicated.

• • •

NINTH ANNUAL ARIZONA CANCER SEMINAR

It is possible to develop growth inhibitors or cancer therapeutic agents which act by inhibiting enzymatic reaction essential to cell production. This is the mode of action of the folic

acid antagonists. However, some cells in leukemia will have two to sixteen times the normal amount of growth enzyme present. This excess enzyme may be a genetically linked characteristic. While the action of the drug is selective and suppressive in effect, the excess enzyme permits the drug to be effective only for a limited period. The cells producing an overabundance of the enzyme will propagate and in them the antagonist is no longer effective. Thus, with a limited period of effectiveness for the drugs now available there is necessity for multiple methods of chemotherapeutic approach in the cancer patient.(1)

Immunological factors may play a role in the defense mechanism of the body against cancer. One must consider the cell-fixed antibody, the serum antibody, the complement and the phagocytes. It is likely that the compliment and the phagocytes must be the site for our defense, a non-specific defense against malignancy. To date no specific antigen has been found in human cancer.(2)

Auto-transplants of cancer cells will grow in only approximately one-third of the cases, and this third is in the group of patients with advanced malignancy. Apparently in this group the patients have lost their own defense mechanism, probably in that segment of the non-specific defensive factors of immunological defense. These are not single cell implants, they have never been able to grow implants where less than 1,000,000 cells have been implanted.(2)

Dr. Ham has shown that a transplanted virus may cause both necrosis and a proliferative phase in the host organ. In producing these changes the virus in itself may be present only during a certain phase of the disease, and it probably will only develop in an incompletely developed organ.(3)

Dr. Bateman uses Thio-tepa in a local dose of 60 mgs. (10 mgm. per 1 cc.) in the average case or 45 mgs. in the poor risk patient. Intravenously: 0.2 mg. per kilogram at the time of surgery and on the second post-operative day. Cytoxan is injected locally, 800 mgs. in the average patient, 600 mgs. in the poor risk patient. If it is used intravenously, 8 mgs. per kilogram for three days, in the average case.(4)

A probable carcinogen for lung cancer in man, Benzypyrene exists not only in cigarette smoke, but also in the fumes from the auto exhausts. Some carcinogens present in both cigarette smoke and exhaust fumes may be antagonistic to each other. In the pulmonary brochus and bronchioles there is a retention of particle size of .2 to .3 mu. The mucus flow of the respiratory epithelium can be completely paralyzed by an adequate stimulation of these retained particles, which are then retained permanently. The protein of the epithelial cells will dissolve these irritant carcinogens, and the generative cell is the one that is susceptible to the effect of the carcinogen.(5)

Kaplan – D N A resides in the nucleus. R N A resides in both the nucleus and cytoplasm. The virus may enter the cell and produce gene change directly. In ovarian granulosa cell tumors there is a disturbance in the "feed back mechanism." For example, if an ovary is implanted into the spleen, the portal system removes the hormone prior to the hormone stimulating the pituitary. This master hormone continues to give stimulating signals to the remaining ovary with added stimulation and in turn tumor formation.(6)

Subcutaneous sarcomas have been stimulated in 50% of the cases with imbedded plastic. The formation of the sarcoma is not related to a chemical stimulus or the purity of the plastic imbedded. The impervious nature of the film is the important factor. The carcinogen effect is due to a disturbance to the growth polarity, and to the growth equilibrium.(6)

Azauridine is stable in the human, antagonizes cellular enzymatic action, has an affinity 15 times greater for the enzyme than the normal metabolic product. It interferes with the biosynthesis of D N A. No toxicity in man has been noted in doses up to 100 mgs. per kilogram. It is effective in acute leukemia. It is not absorbed well from the G I tract.(1)

Five FU (fluorouracil) is found more toxic in dogs than in man, but it is quite toxic to man and objective response is not obtained in patients without obtaining a toxic level. If stomatitis of the lower lip is obtained it is a pathogomonic sign to discontinue the drug. They have had a 35% effective response in patients with cancer of the breast and 25% satisfactory response in patients with cancer of the colon. This response means a decrease in lesion size, the patient improving, and the downward weight curve being stopped. For five days 30 mgs. per kilogram is given, on the sixth day none, on the seventh day one-half that dose is given, the

eighth day none, the ninth day one-half dose, etc., etc., to the level of toxicity. They continue to give this medication every month even if the patient is clinically free of disease. If the tumor recurs, however, it is resistant to this chemotherapy. At the time of second look procedures they have found carcinoma to be present in the patients who are symptom free, but the tumor has been held in quescence. F U R D R has proven better in animal tumors. In patients it has been used in those in good physical condition. Probably it has a lesser toxicity with greater effect on the disease than FU. It will pass the blood-brain barrier. The drug has been found to be eight times as concentrated in the tumor as in the surrounding tissue, but there is a variance from patient to patient. If it is given by drip it is more toxic than if it is given rapidly at the dosage of 30 mgs. per kilogram.(7)

The cell membrane is a characteristic of the sex, there is a difference in the diffusion rate, it is greater in the male. In lung cancer as in other tumors the uniformity of histo-pathologic pattern is a rarity, certainly the morphology does not reflect the etiology of the tumor. There is probably a multiplicity of factors associated with the etiology of most or all malignancies.(5)

Oxygen is one of the most important radiosensitizers known at the moment. A tumor is three times as radio-resistant in the presence of a high level of nitrogen. However, the air tension of oxygen is about all that is necessary to reach the oxygen level plateau.(6)

If we could eliminate the hypoxic group of cancer cells it would be extremely helpful for this is likely the source of recurrence. In man the nitrogen level can be markedly increased in about one minute. This gives real (two-fold) protection in the normal issue, without reducing the X-ray injury to the tumor.(6)

Darwin W. Neubauer, M.D.

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!!!!!

"Wine and stress"*

"Wine provides a mild but long-lasting relief from emotional tension."

The use of wine, especially in moderation, is as old as written history. Social scientists claim that no usage of any kind persists unless it serves an important function.

Stress Relief Studies—Recent research by Greenberg, Carpenter and Associates at Yale University's Laboratory of Applied Physiology, helps explain one reason for the popularity of wine in nearly all cultures and all nations for thousands and thousands of years.

It was found that as little as 3 ounces of a California Burgundy could lower the emotional tension index in normal humans exposed to controlled conditions of extreme stress.

The tranquilizing effect of wine appears to be greater and yet smoother than that produced by most other beverages, and perhaps safer than that of the usual synthetic pill.

Other Physiological Actions and Clinical Roles—The above is just one of the many interesting research studies now being conducted on the physiological effects of wine.

Based on recent findings, the modern Rx uses for wine—in convalescence, cardiology, urology, geriatrics—are discussed in "Uses of Wine in Medical Practice." Wine Advisory Board, 717 Market Street, San Francisco 3, California.

*Silverman, M.: 48th Quarterly Meeting, Soc. Medical Friends of Wine, Jan. 13, 1960

Put your low-back patient back on the payroll

Soma's prompt relief of pain and stiffness can get your low-back patients back to work in days instead of weeks

Soma is unique because it combines the properties of an effective muscle relaxant and an independent analgesic in *a single drug*. Unlike most other muscle relaxants, which can only relax muscle tension, Soma attacks both phases of the pain-spasm cycle at the same time.

Thus with Soma, you can break up both pain and spasm fast, effectively . . . help give your patient the two things he wants most: relief from pain and rapid return to full activity.

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only with higher dosages. Soma is available in 350 mg. tablets. Usual dosage is 1 tablet q.i.d.

The muscle relaxant with an independent pain-relieving action

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How you can help save your patients a month's pay

Kestler reports in J.A.M.A. (April 30, 1960) that conventionally treated low-back syndrome patients required an average of 41 days for full recovery (range: 3 to 90 days). The addition of Soma therapy in this comparative investigation reduced the average to 11.5 days (range: 2 to 21 days). With Soma, patients averaged full recovery 30 days sooner.

Topics of Current Medical Interest

Review of Medical Aspects of Air Pollution

AN INTERNATIONAL CONFERENCE HELD IN VIENNA, AUGUST 29, 1960

Science Information Bureau, Inc., of New York City whose sponsorship is not indicated in their publication, organized a conference on air pollution during the Sixth International Congress on Diseases of the Chest of the American College of Chest Physicians at the University of Vienna. This conference, held at the Imperial Hotel, Vienna, August 29, 1960, was attended by physicians with wide experience in diverse scientific disciplines.

In general, the statements of the various speakers were not documented and were matters of opinion. Among the more interesting points were:

The annual economic loss in the United States due to atmospheric pollution is estimated to be about 1.5 to 4 billion dollars.

South Africans, the world's heaviest smokers, had a lung cancer rate that was less than half the rate in Britain. British immigrants to South Africa had a lung cancer rate that was 44% higher than the South African-born rate.

One city in South Africa, Durban, had a lung cancer rate that was higher than two larger cities, Johannesburg and Cape Town. Apparently Durban has an especially serious air pollution problem. It is a small Los Angeles. The lung cancer rate of British immigrants in Durban was the highest of all groups in South Africa. It has actually reached the fantastic level of more than one in six of all male deaths between 45 and 64 years. Durban's pollution compares with that of central London.

Similar reports were submitted from New Zealand. Immigrants from Britain, when compared with people born in New Zealand, had a higher incidence of lung cancer. Even children, who left Britain before the age of 15 years, showed a 30% increase in the chance of lung cancer compared to the New Zealand-born.

In Japan, Yohokama asthma is cured by change of climate indicating the strong influence of air pollution. This asthma does not occur with greater incidence around May, when the dustfall is greatest, but occurs more frequently in winter, when suspended dust and SO_2 are highest. Lung cancer has recently been increasing rapidly in Japan and is particularly high in areas where the atmosphere is highly polluted.

From 1948 until the present, the rate of lung cancer deaths has increased in Japan about four times. The mortality from lung cancer is considerably higher in Tokyo and other industrial cities than for the country as a whole.

Foreign-born immigrants to the United States from 12 countries definitely do have a higher lung cancer rate than the native born of the United States. Immigrants from England and Wales have a much higher rate for lung cancer than United States natives. Apparently, the amount of tobacco smoking is approximately the same among the foreign-born and the natives. The higher lung cancer rate among the foreign-born applies not only to the urban areas but also to rural regions. In addition, the female immigrants from 11 countries showed an excess lung cancer rate, some to a marked extent over native U. S. females.

Among the iron miners of France an incidence

Published in **Conference**, Vol. 1, No. 2, October, 1960, pp. 1-20 (A publication of Science Information Bureau, Inc., 34 East 51st St., New York 22, N. Y.)

of 3.2% of bronchogenic carcinoma was found in 1,000 miners who were continously exposed to dust in cutting mine tunnels, while an incidence of 1.5% of a like number of mine employees such as clerks and engineers had developed lung cancer.

Chronic bronchitis, bronchospasm and bronchial asthma are most prevalent where air pollution is most severe. In Durban, South Africa, which has a high lung cancer rate, also has a bronchitis rate that is three times higher than any other city in that country.

The need for research to define the characteristics of the air pollution problem was strongly emphasized. In addition to studies on the kinds and sources of air pollutants, epidemiological and biostatistical investigations from the clinical point of view are required.

Hugh H. Smith, M.D., M.P.H.

CONSCIENCE IN MODERN MEDICINE

Last fall Dartmouth and the Dartmouth Medical School sponsored a major academic convocation on the Great Issues of Conscience in Modern Medicine.

The participants included such men as Aldous Huxley, the author; Sir Charles (C.P.) Snow, author of the recent book, "Science and Government;" Rene Jules Dubos, microbiologist of the Rockefeller Institute; Dr. Brock Chisholm, former director-general of the U.N.'s World Health Organization; and Dr. Wilder Penfield, former director of the Montreal Neurological Institute at McGill.

The proceedings were videotaped for the National Educational Television Network and will be shown in a series of three 90-minute programs, "Conscience in Modern Medicine," as follows:

KUAT, Tucson

1. Monday, June 12 – 8:00 p.m.
2. Monday, June 19 – 8:00 p.m.
3. Monday, June 26 – 8:00 p.m.

KAET, Phoenix

1. Thursday, June 29 – 8:00 p.m.
2. Thursday, July 6 – 8:00 p.m.
3. Thursday, July 13 – 8:00 p.m.

ARIZONA BLUE SHIELD — ANNUAL MEETING

At the annual meeting of Arizona Blue Shield on April 27 at the Safari Hotel, Scottsdale, Woodson C. Young, M.D., Phoenix, was elevated to the presidency of the Plan's Board of Directors. He succeeds William G. Payne, M.D., Tempe. Other newly elected officers were: President-Elect, Marcy L. Sussman, M.D., Scottsdale; Vice President, M. W. Phillips, M.D., Prescott; Secretary, Carl A. Holmes, M.D., Phoenix, who was re-elected to this post; and Treasurer, E. N. Holgate, Phoenix, who previously served the Plan in this capacity.

Woodson C. Young, M.D.

Elected to new terms to the Board were: Dr. Payne, Dr. Sussman, Dr. Phillips, Holgate, Frank A. Shallenberger, Jr., M.D., Tucson, and Judge Francis J. Donofrio, Phenix.

L. Donald Lau, Executive Director for the prepayment plan, pointed out in his annual report that Blue Shield had now attained 211,225 members in this State as of December 1960. Gross enrollment in this category was the highest

ever recorded, reaching 74,048. In other Blue Shield categories, the In-Hospital Medical coverage reached a new total high, 118,321, and the Diagnostic Laboratory and X-ray enrollment now lists 54,000 members. Recently 23,733 federal employees were enrolled under the Arizona Plan in connection with the Federal Employees Program.

Total Blue Shield income for 1960 was $3,623,232. Of this amount, the largest ever paid to physicians, $3,271,467 went to provide care for the Blue Shield subscribers. Lau pointed out that slightly over 90c out of every dollar was used, or will be used, from this income for the care of members. Operating expenses for the Plan during 1960 amounted to approximately 10c out of every dollar's income.

SOCIAL SECURITY FACTS HAVE BEEN DISTORTED AND MISREPRESENTED

The truth about this country's social security program has been disorted and misrepresented to the American people and "important political and economic consequences" may result when the facts are ultimately understood, according to an insurance actuary writing in the April 8 issue of the Journal of the American Medical Association.

The article, entitled "The Coming Din of Inequity," was written by Ray M. Peterson, vice president and associate actuary of the Equitable Life Assurance Society of the United States.

Peterson declared that:

1. The public is being given the false impression that the method of financing the social security program possesses many of the unique characteristics of voluntary private insurance which the people have learned to value highly.

2. The program has been misrepresented as being a "time-tested" and "tried and proved" system of financing old age benefits.

3. The people are being given the mistaken impression that social security benefits are paid out of accumulated reserves, similar to private insurance programs, when in truth the program is financed almost entirely on a pay-as-you-go basis with benefits paid out of current income.

Peterson noted that "a great national debate is now in progress as to the issue of providing medical care and hospital benefits under the Social Security System."

"That debate," he said, "can be pursued intelligently and wisely only if we understand the true nature and implications of the social security financing mechanism."

He said that a national old age pension program can be financed on a pay-as-you-go basis, a full-reserve basis, or some combination of the two.

Full-reserve financing is a "prepaid system" in which benefits are fully paid for during the years before they are received, he said.

"Full-reserve financing in the field of private insurance is the test of actuarial soundness and it is the only concept of actuarial soundness with which the American people are generally familiar," Peterson said.

He pointed out that under private insurance, all money paid into the insurance fund together with all income from investment is sufficient to pay all promised or guaranteed benefits.

Pay-as-you-go, on the other hand, means that the government raises through current taxes just enough money to pay the cost of benefits currently due, he said.

"No reserve is accumulated, no element of prepayment is involved," he said. "Money is raised as and after payees become eligible to receive benefits. In this latter sense, 'pay-as-you-go' is really a postpaid system of financing.

He added that the fiscal soundness of a government program depends "mainly on the taxing power of the government."

Peterson declared that the 80 per cent of social security taxes paid for the old age pension portion of the program (20 per cent going to survivor and disability benefits) would buy for new entrants 40 to 60 per cent more in old age benefits under an insurance company group annuity program.

He pointed out that from 1956 through 1965, tax collections for the program will total $115.1 billion while benefits and expenses in that period will total $114.5 billion.

"These figures clearly show that we are now almost completely on a 'pay-as-you-go' or 'hope as you pay' basis," he said.

He said the true nature of social security financing is also "vividly reflected" by the gap between the value of benefits owed to current beneficiaries and the amount of money in the

trust fund.

If taxes paid into the fund had been stopped by Congress last year, Peterson said, the $20.2 billion in the fund would have paid only 23 per cent of the $88.3 billion of obligations to current recipients.

And if tax contributions are cut off in 1965, he said, the estimated $23.1 billion which will be in the fund will pay only 20 per cent of the $114.2 billion of benefit indebtedness owed to the then current beneficiaries.

There would be nothing left over for the millions who had paid taxes to the program but had not yet qualified for benefits, he said.

Peterson stressed also that young workers and those who enter the labor market in the future, together with their employers, will pay more in taxes than the workers will receive in benefits because they must bear a growing burden of indebtedness. This indebtedness arises, he said, from the fact that most present workers and those now receiving payments will have contributed, together with their employers, a great deal less than the actual obligations.

He said there is a "dawning realization" that Americans have but one choice – to pay interest on this debt "forever" since the only way to reduce the debt is for a given generation to build up a huge reserve over and above present payments solely to meet program obligations. "To expect this to happen is to be politically and economically unrealistic," Peterson said.

He said the debt arising from these unearned benefits has climbed from $150 billion in 1952 to about $300 billion under the existing program. It will rise even higher, he said, if Congress adds to the program without a tax increase high enough, as to present workers, to meet the additional cost.

Peterson quoted several public figures who have likened social security to pre-paid private insurance. These include President (then Senator) Kennedy who had called social security a system of paid up insurance and a way of saving money for old age so the elderly won't be a burden to their children.

He said there "is no foundation for these inaccurate parallels" with private insurance.

"Indeed, there is desperate need to dispel these self-mesmerizing, foggy concepts," Peterson said.

He pointed out also that "with no reserve fund in sight to reduce the debt" created under the social security program, "the burden being passed on to future generations is permanent. It is not something that will somehow work itself out, or go away; it is not an actuarial fantasy."

Peterson said that adding medical care to the Social Security System for the present aged would alter the original concept that each person must contribute for a minimum period of time before he is entitled to benefits.

Furthermore, he said, under the Administration social security program, or similar proposals, medical care would add between $20 and $30 billion to "the permanent social security debt on which future generations and their employers would need to pay interest forever."

Peterson said the main purpose of his article was to "show that there are excellent reasons for grave concern as to the probable ultimate effects of continued distortion and misrepresentation by interpreters of the Social Security Act, by statements of inadequately informed members of Congress and even by publications of the Social Security Administration itself."

Another purpose, he said, was to "set the record straight by portraying an accurate picture of the financing mechanism as now operating and by exposing the distortion and misrepresentation, no matter what its origin."

He said that when the American people finally learn that social security financing is "distinctly different" from voluntary private insurance with which it is compared, "a rude awakening may well occur, one which could have important political and economic consequences."

"Will the youngsters of the future protest what the oldsters of this generation have voted for themselves? During the decade ahead, will we oldsters, as we seek to enjoy our social security benefits, hear a rising clamor of unfairness – a din of inequity?"

From AMA "News Release," April 7, 1961

CAMELBACK HOSPITAL EARNS JOINT COMMISSION ACCREDITATION

Camelback Hospital in Phoenix was recently granted full approval by the Joint Commission on Accreditation of Hospitals. Formal announcement was made by Kenneth B. Babcock, M.D.,

Director of the Joint Commission.

Similarly, full approval has also been granted the hospital by the American Psychiatric Association. Only 39 hospitals in the United States have been awarded full approval by the American Psychiatric Association.

Medical Director at Camelback Hospital is Dr. Otto L. Bendheim, M.D., F.A.P.A.

Representing the Joint Commission during the inspection was David C. Gaede, M.D., Central Inspection Board of the American Psychiatric Association.

ACUTE IRON POISONING

The Boston Poison Information Center and the Children's Hospital Medical Center recently reported a case in which a one-year-old girl was fed 40 ferrous sulfate tablets (total of 12 grams) by a 2-year-old brother.(1) Within 2 hours the child was taken to the emergency room in a cyanotic state, unresponsive, and in shock. Her stomach was evacuated by lavage with a sodium bicarbonate solution and exchange transfusion was instituted. Despite these measures the victim died 5 hours after ingestion of the iron tablets.

Although iron preparations are considered to have a relatively wide margin of safety, the above case serves to emphasize the serious consequences of acute poisoning from the ingestion of large doses. The extensive use of iron preparations, particularly ferrous sulfate, for the treatment of anemia in recent years has increased the opportunity for accidental iron poisoning. The colored sugar-coating of the tablets give them the appearance of candy and make them particularly attractive to children. The signs and symptoms of iron poisoning are chiefly associated with gastrointestinal irritation and necrosis, and shock; they also include cyanosis, drowsiness, hematemesis, tarry stools, and cardiovascular collapse. The shock syndrome has been attributed to the excess production of ferritin(2) and to local tissue damage.(3)

Three critical phases in iron poisoning may be observed: (1) an early phase of acute shock that occurs within a few hours after poisoning, (2) a recurrent phase that appears one to two days after poisoning, and (3) occasionally a late phase of pyloric stenosis. Death may occur after apparent recovery. The exact cause of death in iron poisoning is not clear. Fatality has occurred from the ingestion of 40 to 1,600 mg. of ferrous sulfate per kilogram of body weight.(3)

The treatment for iron poisoning is mainly symptomatic. The A.M.A. Committee on Toxicology(3) directs that milk should be given immediately and vomiting induced. Gastric lavage should be performed with the use of a 5% aqueous solution of monosodium phosphate or disodium phosphate. In the case of children 1 or 2 years old, 2 or 3 ounces of the solution should be left in the stomach and proportionally greater amounts in older patients. Bismuth subcarbonate, 200 mg, may be administered every four hours to young children. Dehydration should be corrected by the intravenous infusion of 5% glucose in saline solution. If shock is severe, transfusion with plasma or whole blood should be instituted. Consideration may be given to the intravenous injection of edathamil calcium disodium (Calcium Disodium Versenate) and oxygen should be administered if needed. Exchange transfusion has proven useful in severe poisoning and may be employed. Antibiotics should be administered as prophylaxis against pneumonia and other intercurrent infections. Dimercaprol (BAL) should not be employed because it forms a toxic complex with iron.(2)

In view of the common use of iron preparations and in view of the grave consequences associated with the ingestion of massive amounts of ferrous sulfate or similar drugs, the Arizona Poisoning Control Information Center urges physicians and pharmacists to warn patients to keep these prescriptions out of reach of children.

ACUTE TOXICITY OF PSYCHOPHARMACOLOGIC DRUGS

Information on the acute toxicity of psychopharmacologic drugs in humans has recently been summarized and published by the National Clearinghouse for Poison Control Centers.(4) This information is based on 280 cases of accidental ingestion and overdosage involving "tranquilizer" agents reported by 60 poison control centers over a two-year period. Children younger than five years of age were involved in 62.2% of all reported incidents, and over one-fourth of these children had toxic manifestations.

Varying degrees of central nervous system depression, hypotension, convulsion and extrapyramidal-tract motor activity were reported following ingestion of phenothiazine derivatives. The extrapyramidal-tract activity, which included muscle spasms, rigidity, convulsive twitching, tremor, oculogyric crises, was reported after prochlorperazine and perphenazine. The latter toxic effect followed single ingestion of these drugs in amounts ranging from 5 to 36 times the usual therapeutic dose.

The symptoms found most frequently after ingestion of single, larger than therapeutic, doses of the rauwolfia derivatives were mild central nervous system depression (drowsiness, lethargy, and stupor) and flushing. No serious toxic manifestations were reported following ingestion of single doses of these drugs.

Mild central nervous system depression, coma and hypotension were reported most frequently following meprobamate ingestion. Mild depression was also noted in a few cases involving benactyzine, phenaglycodal and hydroxyzine.

The report from the National Clearinghouse for Poison Control Centers also presents suggestions for the management of overdose from these psychopharmacologic agents. Evacuation of the stomach as soon as possible after ingestion is recommended. Gastric lavage may be the preferred method for emptying the stomach following ingestion of the phenothiazine derivatives. Attempts to induce emesis may be unsuccessful, because of the anti-emetic action of these drugs.(4)

There are no specific antidotes for the treatment of poisoning from the psychopharmacologic agents. Hence, symptomatic and supportive therapy is employed. In cases of coma, it is recommended that treatment be directed toward maintenance of adequate pulmonary ventilation, adequate circulation, fluid and electrolyte balance and nutrition of the patient. Levarterenol is suggested for the treatment of phenothiazine-induced hypotension.(4)

Blumberg and co-workers(3) suggest the use of whole blood, plasma or plasma expanders in the treatment of hypotension in severe meprobamate intoxication. On the other hand, Ferguson and co-workers(6) recommend the use of vasopressor agents, such as metaraminol bitartrate or phenylephrine in the treatment of meprobamate-induced hypotension.

It is suggested that extracorporeal hemodialysis or exchange transfusion may be useful in the treatment of selected cases of severe meprobamate poisoning. In the case of severe chlorpromazine intoxication, exchange transfusions may be preferred to dialysis, since the drug is tightly bound to circulating plasma proteins (4)

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MEDICAL COURT CASES

by Howard Newcomb Morse
Counsellor at Law of the
Supreme Court of the
United States of America

Lashley vs. Koerber
District Court of Appeal of California
150 P. 2d 272

Mrs. Thelma L. Lashley injured her right ring finger on August 30th while adjusting a folding bed. It was the Saturday before Labor Day, and she was unable to get in touch with Dr. George E. Koerber, a physician and surgeon, until the following Tuesday morning, September 2nd. In the meantime, pursuant to advice given by the person answering the physician's telephone, she soaked the finger in hot epsom salts.

On Monday, the day before she saw the phy-

sician, she went to the Highland Hospital and was told that she was doing all she could for the finger until she saw her physician. On Tuesday morning she met the physician at his office, and he diagnosed the injury as a fracture, but her hand was so swollen he could do nothing with it that day, and he told her to continue soaking it until Thursday, and that he believed it would then be possible to put it in splints.

During that visit she asked him if he did not want an x-ray taken and he replied that it would not be necessary. When she returned on Thursday the finger was still so swollen and crooked that it could not be manipulated and while it was in that condition he put it in splints. Before placing the finger in splints he put the finger in as full extension as possible. For splints he used several applicator sticks bound together with adhesive tape.

He changed the splints every few days. On several of those visits to his office she asked him if he did not want to x-ray the finger and he said it was not necessary. After some weeks the finger was still swollen and crooked and on October 25th, of her own volition, she called on a Dr. Stein in Albany, California, and had the finger x-rayed. The next month she returned to Dr. Koerber and told him about the x-ray, but did not show it to him. At that time they discussed an operation but the physician said it would not do any good to "rush the operation." He said that later on he would operate if she had an x-ray taken and at that time he believed the operation was advisable.

On January 2nd of the following year, she again called on him. She was accompanied by her husband. On that visit they discussed the matter of the operation, but he then told them that before he could operate it would be necessary for him to have another x-ray. He gave her the address of the place to have it taken. She had the x-ray taken, and it was sent to him. Two days later she returned to his office and at that time he told her that according to the x-ray he could not operate on the finger, that he would rather have an orthopedic specialist see it, and he requested her to take the x-ray to a Dr. Barnard.

Dr. Barnard did not operate, but put tape on the finger, and later she returned to see Dr. Koerber. When she returned to him she had taken off the tape put on by Dr. Barnard because she said it was uncomfortable. Dr. Koerber told her if she was not going to follow the treatment ordered for her by Dr. Barnard there was nothing further he could do for her.

The report accompanying the x-ray taken in January stated that it showed a fracture of the base of the terminal phalanx whose shaft was markedly displaced in the volar direction. In this connection Dr. Koerber explained that a chip of the bone to which a tendon was attached, had been broken off, and that the tendon had pulled the chip out of position; and that arthritis in the joint had prevented the chip from uniting to the bone.

Mrs. Lashley brought an action in the Superior Court of Alameda County, California, against Dr. Koerber to recover damages for injuries resulting from alleged malpractice. She claimed that he did not exercise proper care and skill in ascertaining the true condition of the fracture and in the treatment thereof. She further contended that because of such failure the terminal phalanx of the finger became permanently crooked, which greatly interfered with her ability to follow her usual employment as a waitress. The main ground upon which she based her claim of negligence was that he failed to have x-rays taken of the finger to determine the proper healing position.

After she had testified concerning the manner in which the finger had been treated and as to the conversations she claimed took place between herself and the physician on the several visits she made to his office, the physician was called as a witness. He testified that if an x-ray had been taken when she was first injured it would only have confirmed his diagnosis; that it was not necessary to take an x-ray because he knew from the clinical examination that she had fractured the terminal phalanx.

Continuing, he testified that if an x-ray had been taken at any time up to the first of October, "The treatment would have been the same. X-ray is simply a form of diagnosis, it is not a treatment in itself. I knew there was a chip fracture at the base of that phalanx. I knew the finger had to be splinted in full extension, and simply having taken an x-ray would have perhaps added some slight confirmation to what I did but it would not have changed what I did in the slightest, nor would it have changed the eventual result."

He also testified that he suspected she had a

tendency toward arthritis, and that the x-ray taken in January showed arthritis present, but that even if an x-ray had shown acute arthritis the treatment would not have been any different. He also testified that the treatment given her was such as was generally given by physicians and surgeons of good repute in that community, and that seven out of eight physicians with whom he had discussed the matter said it was not their practice to always demand an x-ray in treating fractures.

The only other witness she produced was her husband, who related one of the conversations had between his wife and the physician. She then rested her case, whereupon the physician moved for a nonsuit (that her case be dismissed) on the ground that she had produced no expert testimony to show that his treatment of the finger was not in accordance with the usual practice or that the failure to have an x-ray taken in treating an injury of this kind constituted negligence.

After hearing the arguments on the motion the court expressed the opinion that in the absence of expert testimony a case of negligence legally sufficient to go to the jury had not been made out, adding that if she desired to supply such testimony she would be permitted to do so, otherwise the court would have to grant the motion. Her counsel replied that he had no expert testimony, whereupon the motion for nonsuit was granted. From the judgment entered thereon she appealed.

The District Court of Appeal of California affirmed the decision of the court below. She again appealed, and the Supreme Court of California reversed the decision of the District Court of Appeal on the grounds that expert testimony was not necessary in order for her to establish her case. The Supreme Court declared: "When the defendant (the physician) finally did have an x-ray picture taken it showed, according to the report of the roentgenologist, a 'fracture of the base of the terminal phalanx whose shaft is *markedly displaced.*' (Italics added.) It does not require the testimony of an expert, under the conditions shown here, to support the conclusion that a piece of bone which is markedly displayed from the larger bone from which it has been detached is not in proper healing position." Accordingly, the Supreme Court held that she had adduced sufficient evidence of his negligence for the case to have been submitted to the jury.

MEDICAL JOURNAL

Many photographs have been received for the Illustrated Membership Roster to be published in *Arizona Medicine*. If you have not forwarded yours, would you please do so?

Mail to: Editorial Office, 720 N. Country Club Road, Tucson, Arizona.

Reprints

Distribution Of Coccidioides Immites Determined By Testing Cattle

Keith T. Maddy, D.V.M., M.P.H.

H. Gilbert Crecelius, Ph.D.

Richard G. Cornell, Ph.D.

Comparison of the data for cattle with those for persons reveals that cattle become infected at about twice the rate for persons living in the same area. A previous Arizona study revealed the tendency for the prevalence of positive skin test reactions of persons to level off after 12 years of exposure. In cattle, it was found that after 6 years of exposure there was also a marked leveling off. Because of this, all animals beyond 6 years of age were eliminated from this study. This leveling off is no doubt related to the reversions of positives to negatives. The annual conversion rates from negative to positive in a previous study on human beings, as calculated by the Manos method, was a little less than half that found for the cattle in this study when the rates were calculated by the same method.

The annual rate of conversions to positives among cattle is almost identical to that found in skin tests of persons in Maricopa, Pima, and Pinal Counties during the first year of exposure. Therefore, the rates for cattle are indicative of the actual percent of a susceptible human population that becomes infected per year for each county.

Other studies by Maddy on cattle in these same counties in which cattle were coccidioidin tested every few months revealed that the conversion rates to positive were about double those indicated by the annual conversion rates for cattle in this study, using the Manos method. No doubt, this also reflects the loss of positives among infected cattle over a period of a few years.

Comparison of data for persons and cattle also indicates that the prevalence of coccidioidin sensitivity of cattle 5 and 6 years of age is about the same as that found when persons with 12 years or more of exposure in the endemic area are tested.

This study revealed for the first time that the low altitude areas of Yavapai and Mohave Counties and additional areas of Gila County are endemic for coccidioidomycosis. The absence of test results positive only to histoplasmin and haplomycin indicated that all reactions to these two test agents were cross reactions caused by *C. immitis* infections in cattle. Therefore, it is

An Abstract — Reprinted from Public Health Reports, Vol. 75, No. 10, October 1960, by permission.

believed that the cattle tested in this study were not infected with *H. capsulatum* or *Haplosporangium parvum*.

In this study fomites, such as feeds raised in endemic areas, did not appear to be good vehicles for transmission of *C. immitis* to cattle in nonendemic areas fed these feeds.

We believe this study has served as an example of how an animal with a limited home range, that also acquires an infection common to man, can be used to delineate the geographic distribution of the infective agent. For instance, if a good blastomycin could be produced, perhaps a skin test survey of home-raised cattle in selected areas of central and eastern United States would also reveal useful ecologic data on blastomycosis.

SUMMARY

From various areas of each county of Arizona, 11,643 home-raised cattle 1-6 years of age were coccidioidin tested and 2,859, or 24.6 percent, were found to be positive. Whereas previous human skin test surveys have given only indefinite indications of the extent of the endemic areas, this study revealed rather definite boundaries and the relative infectivity of various parts of the endemic area of the State. The endemic areas were found to be practically co-terminous with the Lower Sonoran Life Zone.

The low altitude areas of Yavapai and Mohave Counties and additional areas of Gila County were established as endemic areas for the first time, and several areas of the State of above 5,500 feet altitude, previously in a suspect classification, were found to be noninfective to cattle.

The annual conversion rates for cattle, calculated by the Manos method, were found to be almost identical with the actual human infection rate per year in those counties where this relationship was studied.

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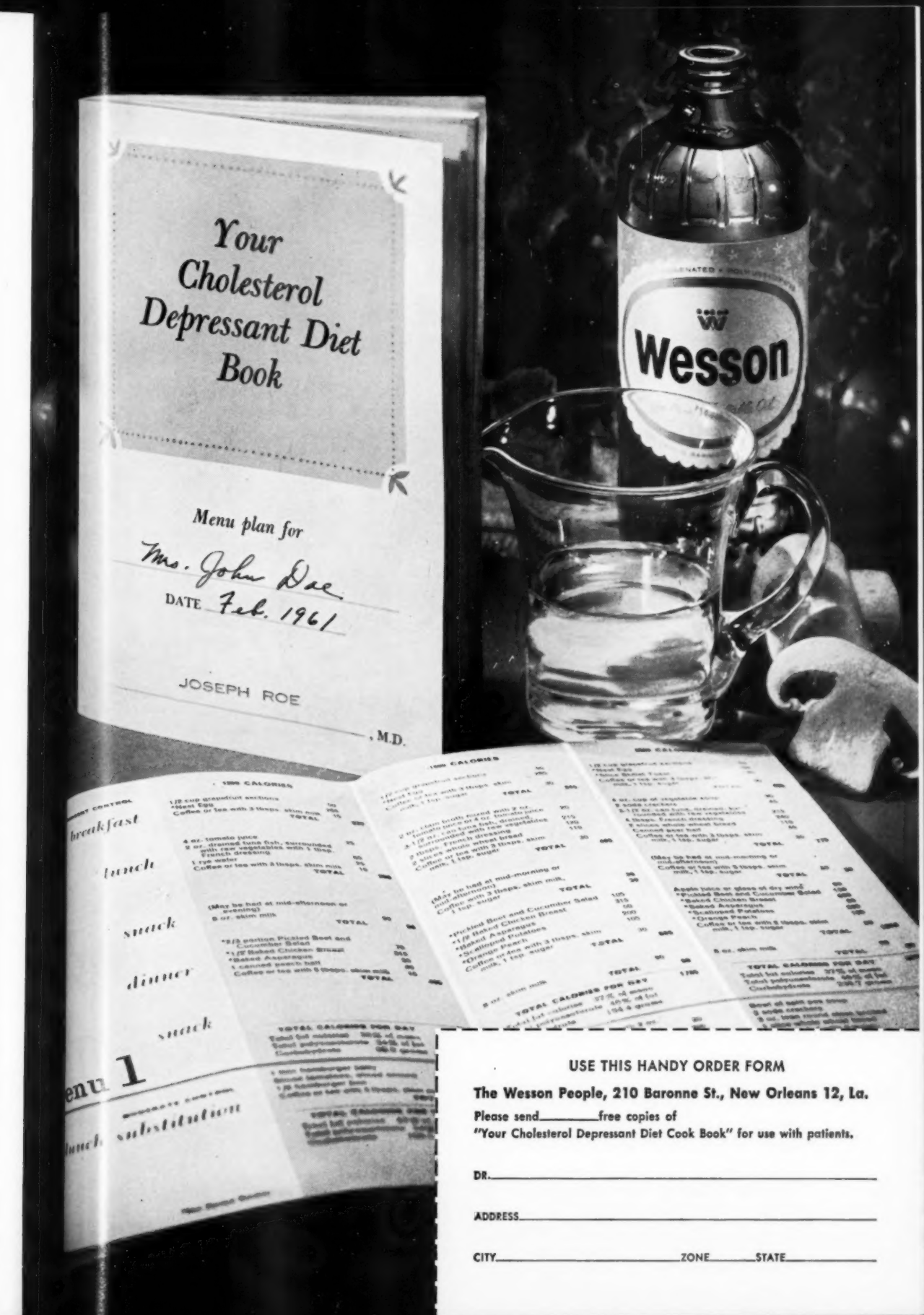

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Future Medical Meetings

Annual Meeting American College of Chest Physicians

The 27th Annual Meeting of the American College of Chest Physicians will be held at the Commodore Hotel, New York City, Thursday, June 22 through Monday, June 26, 1961. Scientific sessions will open Saturday, June 24 and will continue through Monday, June 26.

A joint session with the Section on Diseases of the Chest of the American Medical Association will be held at the Coliseum, Monday, June 26. This will be the first joint meeting in the history of the two societies.

The popular Fireside Conferences, also to be a joint session sponsored by both the AMA and the College, will be held at the Commodore Hotel, Monday evening, June 26. The following physicians from Arizona will participate in these Firesides: Drs. Howell S. Randolph, Phoenix; Andre J. Bruwer, Orin J. Farness, Solomon Netzer and Henry J. Stanford, Tucson.

REGIONAL MEETINGS

Summer and Early Autumn, 1961

June 19-21, 1961
Survey of Human Genetics
University of Colorado School of Medicine
Denver, Colorado

June 28-July 1, 1961
69th Annual Meeting
Idaho State Medical Association
Sun Valley, Idaho

July 10-13, 1961
University of Colorado Medical Center
Course on Ophthalmology
Estes Park, Colorado

July 12-13, 1961
15th Annual Rocky Mountain
Cancer Conference
Denver, Colorado

July 17-20, 1961
New Mexico Chapter, AAGP
Ruidoso, New Mexico

July 24-28, 1961
American College of Chest Physicians
Course on Cardiopulmonary Problems
Denver, Colorado

July 27-29, 1961
University of Colorado Medical Center
Dermatology for General Practitioners
Denver, Colorado

August 10-12, 1961
Rocky Mountain Radiological Society
Denver, Colorado

August 21-25, 1961
Colorado University Medical School
Pediatrics
Estes Park, Colorado

August 23-26, 1961
Nevada State Medical Association
and Reno Surgical Society

September 13-15, 1961
Utah State Medical Association and
Rocky Mountain Medical Conference
Salt Lake City, Utah

September 18-21, 1961
Wyoming State Medical Society
Moran, Wyoming

September 2--23, 1961
Idtho Academy of General Practice
Boise, Idaho

September 21-24, 1961
American Psychiatric Association
Fourth Western Divisional Meeting
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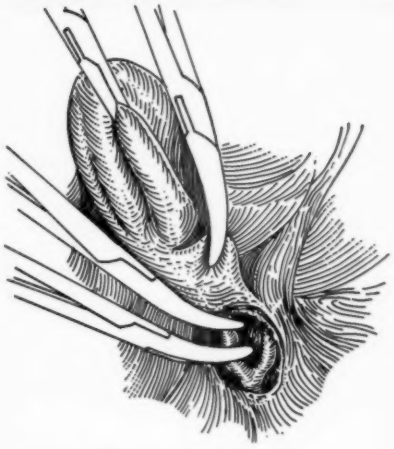

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Source: Farris, J. M., and Smith, G. K.: M. Clin. North America *43*:1133 (July) 1959.

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1. The Composition of Milks. Publication 254, National Academy of Sciences and National Research Council, Revised 1953.
2. Brown, G.W.; Tuholski, J.M.; Sauer, L.W.; Minsk, L.D., and Rosenstern, I.: J. Pediat. 56:391 (Mar.) 1960.

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